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**FOREIGN  
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# ***JPRS Report***

# **Soviet Union**

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***Economic Affairs***

22 JULY 1987

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## SOVIET UNION ECONOMIC AFFAIRS

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## SELECTED MATERIAL ON STATE ACCEPTANCE OF PRODUCTION

## Kurgan Bus Plant Complaints

Moscow PRAVDA in Russian 24 May 87 p 2

[Article by Yu. Shpakov, PRAVDA correspondent: "Centaur at the Cross-Roads ; first two paragraphs are source introduction]

[Text] Kurgan--"Let us assume that state acceptance will be introduced here tomorrow" stated the director of the Kurgan Bus Plant A. Sobolev, "and immediately our enterprise will come to a halt: indeed not one of our products conforms fully to the existing standards."

It was strange to hear this. Indeed, many fine changes had taken place recently at the plant and many former difficulties had been overcome. The production of the new KAvZ-3270 model had been mastered. The demand for products was constantly increasing. According to last year's results, the collective emerged the winner of the competition. It was added to the oblast's Board of Honor and its accomplishment celebrated by challenge banners. Why then is state acceptance feared here?

Strictly speaking, it turns out that motor buses as such are not produced in Kurgan. Here they merely adapt trucks for transporting people. The entire undercarriage comes from a conveyor line at the Gorkiy Motor Vehicle Plant in assembled form. It is actually a GAZ-53 vehicle, only without the body. The Kurgan workers install a passenger compartment on the undercarriage and it takes on the appearance of a mechanical centaur - half-truck and half-bus. It possesses the advantages of an unpretentious rural cross-country vehicle and at the same time it is sufficiently comfortable.

However the linking operation is a painful process. The Gorkiy undercarriages are delivered directly to the dismantling sector, where brigade specialists undertake to "shorten" the equipment. Workers remove the leading portion of the driver's cabin and individual units and parts, including the generator, main brake cylinder, relay and wiring. Up until comparatively recently, all of this new and deficit equipment was discarded. At the present time, a number of units are being used as spare parts. Nevertheless, there is still a considerable amount of waste.

"It is painful to observe such absurdities" stated mechanic I. Yevdokimov, "We are destroying the work performed by others and material values. At times

the young workers turn to me, a communist and chairman of a people's control group, and inquire as to how long this outrage is expected to continue. And what can I reply? I myself am offended!

The specialists maintain that the requirements for a bus are special and that the work can only be completed if the undercarriage of the truck is remodeled. But cannot this work be done in Gorkiy? This question has been addressed to the management of the Torkovskiy Motor Vehicle Plant on a number of occasions and on each occasion the reply was negative. At the giant plant, the authorities think nothing of treading upon the interests of allied workers. And the fact that this leads to scandalous mismanagement is obviously not viewed as being of great importance. The noise of sledge-hammers in use continues to be heard in the dismantling sector.

Since the GOST's [state standards] for trucks and buses are not compatible, the Kurgan "centaur" turns out to be beyond the law. Different interpretations are not embodied in the normative documents and thus state acceptance is quite justified in resorting to the use of categorical measures. Even in those instances where all of the quality indicators turn out to be faultless.

Even an individual possessing a limited technical knowledge is capable of realizing that the latest plant innovation is not the last word in world bus construction. Just as in the past, the Kurgan vehicle is antiquated and clumsy. Regardless of how hard the local designers strive to improve the appearance of their brainchild, they simply are unable to conceal the crude features of their converted truck. This is why voices are persistently being heard at the plant urging that the present practice be discontinued and that use be made of the unit method for assembling vehicles -- as is being done at related enterprises.

Last summer, a group of young workers and engineers proposed the establishment of a creative youth center in the interest of developing a more progressive bus model on a social basis. The plan was a bold one: not to yield to foreign models, but rather to overtake them.

"We began with a great amount of enthusiasm" recalled young communist O. Stefantsev, "We were inspired by the words of comrade M.S. Gorbachev, uttered during a meeting with the collective of AvtoVAZ: 'In the capacity of our motor vehicle builders, why do you not become the "legislators of fashion" on the world market?' Each day, until late at night, they made drawings and sketches, they argued and they studied the technical literature and documentation. But subsequently, in the autumn several of our activists were sent off to aid in harvesting the crops for an extended period of time. The work had to be halted. We appealed to the management and to the party committee, but no support was forthcoming. The chief engineer stated directly: there is nothing available, you must yourselves promote fulfillment of the plan.

Thus the dream collapsed. Today the creative center is mentioned only in the local press. The chief social designer, I. Britkin, was discharged from the plant.

One should listen to the arguments advanced by those who advocate retaining the old technology. The KAvZ's being produced at the present time possess a raised cross-country capability, they are comfortable and they are simple to operate. They are used willingly by oil workers, geologists and agricultural workers: indeed, any other bus tends to skid in those areas where the homely Kurgan "centaur" chooses to move.

"Our vehicles operate under extreme conditions and they are used by production workers rather than tourists" stated chief engineer Yu. Sarafanov, "and we must examine the quality indicators from the standpoint of consumer. A drilling specialist or a milkmaid does not require a modern style for a bus, but rather they are more interested in their vehicle not skidding in mud or stalling on hills.

At the plant, they enjoy comparing the KAvZ vehicle to a pair of worker's overalls, which needs only to be durable rather than elegant. Beauty is not needed for specialized clothing. But indeed work clothing requires the attention of a designer. And most important is the fact that one must not march into the future burdened with yesterday's concepts. We do not mean to imply that the complicated conditions under which our Kurgan vehicles are operated require that they be designed according to antiquated yardsticks nor that a search for unique solutions should be rejected outright.

We believe that the KAvZ vehicles can and must be maintained at the level of international models. Certainly, there is no point to having them compete against models intended for use on municipal highways. But our goal must be as follows: to create the best transport vehicles in the world for use on bad roads, vehicles which will operate in a faultless manner during all types of weather and in the absence of a repair base. Many areas of Siberia, the Urals, the Far East, the north Caucasus and other regions of the country have been waiting to receive such vehicles for a long period of time.

Today these buses are selling like hotcakes, as the saying goes, since nobody else is producing similar vehicles. The requests for them are being satisfied by only 50 percent. Yet an investigation reveals that the consumers are dissatisfied with the low power rating of the engine, the uncomfortable compartment and the low quality of the finishing materials. But indeed the plant has no competition. This is the only bus of its nature being offered.

There are also other serious complaints. The overwhelming majority of the consumers would like to obtain buses for use in northern areas -- with an improved heating system, double internal lining and special tires. Only this type of variant is acceptable to Siberians or organizations in the Far East. These vehicles constitute only three percent of the overall production of buses. It is easy to understand why: the expenditure of materials and the labor-intensiveness involved in the production of the "northern model" are increasing sharply and the number of completed machines is limited. The fact that a vehicle is heated is not a luxury but rather a means for protecting the health of its occupants. Yet this fact is being ignored by the leaders of Minavtoprom [Ministry of the Automotive Industry] and a department of Gosplan. It is at this point that the plant's communists should display high principles

and sound the alarm at all levels. But nobody appears to be disturbed. They do what they are told to do "from on high."

Certainly, these problems must be resolved first of all by the branch's staff. But the enterprise's leaders must not overlook the labor collective. The course of events could be influenced substantially by their taking an active stand. The greater the interest shown by the Kurgan workers in the future fate of their plant, the sooner their bus will be raised from the quagmire of confusion and disorder onto the mainline for progress. There then will be no need for fearing state acceptance.

#### Sanctions for Poor Work

Moscow EKONOMICHESKAYA GAZETA in Russian No 20, May 87 p 8

[Article by D. Svetlanova: "What Happens To Wages?"; first two paragraphs are source introduction]

[Text] Minsk--On the eve of introduction of non-departmental control, the general director of the Minsk Motor Plant Production Association signed an order obligating the leaders of all subunits to compute the value of the unsuitable products produced by a specific guilty party.

Such practice existed earlier in the association. True, sanctions were by no means always applied prior to the introduction of state acceptance. And what is the situation today? We addressed this question to workers attached to the Minsk Motor Plant Production Association.

When a Plant Is Punished -- by Ye. Ivanko, deputy general director:

Last year, a new statute on incentive funds entered into force. When the results for 1986 were summarized, it turned out that 208,000 rubles had been removed from the association's incentive funds -- sanctions for low quality products and expenditures for correcting the defects uncovered. It goes without saying that such damage was considerable even for such a large enterprise as ours. Thus a decision was handed down: the amount of damage was to be reimbursed by the specific departments and shops deemed guilty of having produced the low quality products.

Initially there were many who believed that an order is an order and yet it was believed that not all of the expenses for reworking the products rejected by state acceptance should be borne only by those directly responsible. Indeed it is no secret that earlier a considerable portion of the cost of repetitive work was written off for production and this may no means stimulated high quality work by some workers. It was possible to hide behind somebody's back in the hope that the foreman or the department head would "cover" the situation. However, it can not be firmly stated that there will no longer be any levelling off in the payments for high quality or careless work.

Dozens of examples could be cited as proof of this fact. Here is an incident that happened not too long ago. One day in January, state acceptance, during the course of inspecting a group of engines, detected in two of them several



serious deviations from the requirements set forth in the normative-technical documentation. Additional expenditures in the amount of 131 rubles were needed for correcting the situation, for once again subjecting the engines to a complete series of tests and for carrying out a controlled inspection. However, nobody singled out the specific guilty party and thus punishments were handed down to both deputy chiefs of the department, the shift foreman and to two workers attached to the departmental bureau of technical control -- between them they shared the total amount of expenditures required for correcting the defective products. Moreover, their names were mentioned during a conference on quality (we conduct such meetings on a daily basis), the incident was discussed during a worker's meeting in the department and the incident was later published in the large circulation newspaper MOTOROSTROITEL. You will agree that the next time these individuals will do everything possible to avoid such "praise." Thus we are encountering fewer incidents in which the guilty parties are not singled out.

The final result is the best proof of the effectiveness of the measures undertaken. In January and February of 1987, the losses from defective products compared to the average monthly level for the previous year declined by 37 percent.

At times, one hears the statement being made that state acceptance is bringing about a reduction in wages for some workers. Yes, this is true. But it is not because of state acceptance but rather owing to their own carelessness and irresponsibility.

It is too early for us to appear contented with our work so long as there is so much as one poor comment regarding the MMZ engine. Indeed, in the obligations which we undertook for the 12th Five-Year Plan, one goal is clearly outlined: by the end of the five-year plan, to reach the 100 percent mark for the production of motors bearing the Badge of Quality.

In my opinion, one of the chief obstacles confronting us with regard to achieving this goal is that of situations in which the poor work of one individual casts a shadow on the labor being performed by other comrades in a brigade. Today the workers themselves strive to avoid such situations. This is especially noticeable in mechanical assembly production work.

Is It Possible Or Mandatory? -- by L. Yastremskiy, chief of Mechanical Assembly Department No. 6:

What was the situation earlier? I was authorized to determine the percentage of the amount to be withheld from a bungling worker. Frankly speaking however, it was possible to close my eyes and to raise or lower this percentage. For example, a greater amount of the defective workmanship could be applied to production. And this possibility could be combined with a mandatory action.

Today the situation has changed: today I am simply obligated to apply all expenses for rejected products produced in the department to the specific guilty party. The amount of deduction authorized has been increased -- to the

amount of the monthly earnings. This has made the withholding for defective products not only symbolic but also more meaningful.

In order to ensure that everybody became familiar with the new system for punishing bungling workers, we conducted a party-economic aktiv for the department and subsequently meetings were held in all four sectors. An interesting detail -- the workers themselves warmly supported the new measure and they posed the question as follows: how much work can be performed for a bungling worker?

Within the department there is a committee for analyzing the losses caused by defective workmanship. In addition to the chief of the Technical Control Bureau, it also includes workers from the technical bureau, the deputy chief of the department for engineering and foremen. The department also has a site where all of the defective products produced in a day's time are allowed to accumulate. Each day, at 1530 hours, the committee assembles here in order to determine which crankshafts can still be improved to normal condition and which must finally be rejected as defective. The true cause of the defective workmanship is established immediately. Was a worker the guilty party? Was a machine poorly adjusted. Should a trouble-shooter share the guilt with the bungling worker?

For example, the size of a stem of a crankshaft is shortened. A document is prepared for writing off the unsuitable product and the full value of the crankshaft -- approximately 19 rubles -- is withheld from the guilty party. This incident involving defective workmanship was one of two uncovered during February. And in January there were six -- this dynamic increase tells a story!

And what about the final result? It is best if I cite some figures. In 1985, 7,116 rubles were withheld from our department because of defective workmanship. Sixty percent of this amount was withheld from the guilty parties. In 1986, the fines amounted to 2,309 rubles. And finally, in January 1987 the loss amounted to 127 rubles. This entire amount was recovered in full from the bungling workers.

We draw your attention to the fact that the total amount of withholdings, computed for an average monthly figure, is steadily declining. This testifies to the fact that there now is less defective workmanship in our mechanical assembly production operations.

The Guilty Party Pays For the Defective Workmanship -- by V. Bayeshko, shift brigade leader for Department No. 6 and member of the party bureau:

It is also necessary to learn how to handle an unconscientious worker. We have begun doing this in our brigade.

For example, last year 13 crankshafts were rejected and all for one and the same reason. It became clear that the same bungling worker was responsible in all instances. Stronger inter-operation control was implemented, a check was instituted throughout the entire network concerned with the assembly of crankshafts and the bungling worker was discovered -- it turned out to be

Tanya Z. A lack of attention and inability to concentrate on her operation were the causes of her defective work.

Understandably, the amount of damage was reimbursed by Tatyana and yet this incident forced us to give further thought to the problem: an individual approach is needed for each worker. A general meeting is good, a strengthening of departmental control and meticulous investigations by state acceptance specialists are also helpful. But until all workers without exception are brought up to this level, there will be no guarantee that defective workmanship will not surface once again in this or another sector.

In our brigade there are more than 30 individuals -- grinders, lathe operators and trouble-shooters. And in the not too distant past there were two occasions when we were presented bills for defective workmanship. Since the specific "hero" had not been singled out, the entire amount of damage was applied to the entire group of people through whose hands the defective products had passed. Only a small amount of money was withheld from each individual and yet the problem was not one of money alone. The personnel resented the fact that, after having worked in an outstanding manner, they were punished for somebody else's carelessness. The next time, they will themselves point out the bungling worker.

Low quality work affects not only one's pocket but also his self-respect: one is ashamed to face his comrades. Today there no longer is any "unaccounted for" defective workmanship and this has brought about a reduction in the amount of unsuitable products.

An objection could be raised: the machine workers are not always responsible for all of the problems. The quality is affected by the condition of the equipment and by the durability of the measurement instruments. It is also true that some of the grinding machines date back to 1961. A quarter of a century is a long period of time for equipment to remain continuously in operation. But machines which are properly adjusted and checked for technological accuracy as a rule will not produce defective products. This is why such importance is attached to the work of trouble-shooters.

We have a system which calls for the foreman to be given a request on Friday to have preventive maintenance work carried out on the equipment over the weekend. In this manner, the brigade is able to commence work on Mondays on equipment that is in good working order. But if it happens that defective workmanship appears as a result of poor adjustment of the equipment, it is easy to establish the author of the bungling workmanship. The damage caused to the department is recovered from the trouble-shooter involved.

Certainly, it is always unpleasant to have to pay a fine. But what else can be done? Unless such action is taken, we will be unable to erect a reliable barrier against poor work.

## Changes at Tbilisi Plant Evaluated

Tbilisi ZARYA VOSTOKA in Russian 4 Mar 87 p 2

[Article by Nugzar Mikeladze: "According To Today's Standards."; first paragraph is source introduction]

[Text] The Tbilisi Experimental Plant for Analytical Instruments of the Analitpribor Scientific-Production Association is an enterprise which has been entrusted with a special role in connection with the current process for restructuring the economic mechanism. Complete cost accounting [khozraschet], self-financing and self-support [samookupayemost] have been introduced into operations here simultaneously with the state acceptance of products. These are very serious tests. The collective is undertaking them -- thus there is radical restructuring and a sharp turn for the better has taken place over to leading and modern methods of management. It is difficult to exaggerate the experience of the leaders in this work.

As never before, importance is being attached today to understanding the initial steps being taken by the collective under the changing work conditions. And beyond any doubt, this must be done from a very exacting standpoint. What tasks are confronting the collective? Are they large-scale according to today's standards? How are they being solved -- using means which were tested long ago, or basically new means? And most important -- what are the results?

### Task No. 1

Yes, it is a task that has two components -- rates and quality.

Compared to 1986 when TOZAP [Tbilisskiy opytный zavod analiticheskikh priborov; Tbilisi Experimental Plant for Analytic Instruments] produced 6.2 million rubles worth of products, its volume in 1987 will be increased by 1 million rubles or by almost 14 percent. In 1986, the production plan called for 40 percent of the output to bear the state Badge of Quality and the 1987 plan -- 85 percent.

"As you can see" commented the director of the plant Georgiy Dugladze, "in former times, we simply gave no thought to the possibility that quality could be harmed by an increase in the production volume. It was necessary to work.

Actually, the plant's collective must work today as never before. Within the Analitpribor Association, the conversion over to self-financing and cost accounting signifies not only a considerable expansion in the rights of enterprises but also and primarily an increase in responsibility for the final results of labor. The entire system of planning, financing and stimulating all economic activity must be restructured.

Moving ahead, I would like to say that there were no disruptions in January and February -- reliable preparations were made for state acceptance. This was clear even at the end of last year when all of the plant's products were



accepted and the amounts presented in October, November and December were even greater than those called for in the tasks.

"The responsibility for the results of labor" stated the plant's chief engineer Robert Pirtskhalaishvili, "has increased beyond any doubt. But indeed, new opportunities and new and effective levers for managing production have appeared for us. State acceptance is actually assisting us in uncovering and placing in operation reserves for improving quality; self-financing is making it possible to develop production and to raise its technical level by means of internal capital. In addition, it must not be forgotten that a comparison against many other enterprises reveals that we possess one notable advantage. The plant is included in the structure of a scientific-production association -- and alongside there is a leading institute. Its specialists developed almost all of the instruments which we are producing and the assistance which we receive from them when needed is highly skilled."

#### A Time For Strengthening Relationships

The chief engineer holds a glass tube in his hand.

"This is a capillary. It was developed at our leading institute. It is employed in an FS-151 instrument, a unit for analyzing mechanical impurities in liquid fuel and oils. Workers attached to the state acceptance service detected a large percentage of defective workmanship in each batch of capillaries. We were then forced to turn directly to those people engaged in producing them -- specialists attached to one of the research departments of the association -- Aram Ovanesyan, Gogi Metreveli, Anatoliy Karleyev. For their part, these individuals brought in the designers, who within a short period of time improved the technology and, in particular, adjusted the polishing process and replaced one obsolete machine. Before long, the quality of the capillaries had improved sharply."

This is not the only example of the advantages offered by an NPO [scientific production association] structure. For example, it was only recently that the state acceptance service and workers attached to TOZAP intervened actively in the work of their allied workers -- at the Dzhvari plant of the Analitpribor Association, through common efforts, they improved the process for plotting diagrams on printed circuit cards.

"But indeed the plant has many suppliers and are not solutions required for all of the problems concerned with cooperation within the association's framework?" I asked the chief engineer.

"Yes, we obtain our completion parts from roughly 450 enterprises throughout the country and the quality of these parts is quite often low. We impose sanctions and we return the unsuitable products. This has happened quite frequently recently thanks to the efforts of the input control service. And even all of these measures are not sufficiently effective."

"But the problem must be solved."

"Well, first of all, despite the fact that it was a difficult task, we informed all of our suppliers that we had converted over to state acceptance and we asked them, rather we demanded, to supply us with products which conformed to the GOST's [state standards]. And wouldn't you know, almost all of our partners replied and assured us that they would. Secondly. I would urge you to move on to the third state and there, at the end of a corridor, there is a door on the right, the last one. Ask who here is from Nevinnomyssk.

Ivan Pavlovich Kirchanov, a mechanic engaged in mechanical assembly work at the Xvant Production Association, is from the city of Nevinnomyssk in Krasnodar Kray. He was summoned to the Analitpribor Association owing to the fact that a large batch of instruments delivered to Tbilisi by his collective turned out to be defective.

"This was not a pleasant temporary duty assignment" he confessed, "I was somewhat ashamed."

Ivan Pavlovich was able to repair and adjust a large number of instruments which were received from Nevinnomyssk for use in an AMA-201 complex, which processes information on the degree of contamination of reservoirs. Two other units he had to send back, since the defects were beyond repair.

By way of an apology, the guest turned to those who were standing alongside us.

"These are December instruments. State acceptance has also been introduced in our association. See for yourself the products that are now arriving."

In commenting upon this statement, the leader of the state acceptance organ at the plant, Grigoriy Gogodze, stated that a check would be carried out within the collective and that it was necessary to function, to work and to carry out still more work with allied workers. This work, if you please is very complicated work and much depends upon the commercial service. Concern must be displayed for ensuring that the authority of the collective is the authority of a very reliable supplier. At such a time, the placing of demands upon others will be fully justified.

Much is being accomplished in this direction. Intra-plant planning has become more flexible. TOZAP is producing approximately 70 types of products and mainly small batches of instruments and the possibility exists of restructuring for the production of the products required. But there are also serious difficulties. This year the enterprise has been provided with funds for only 70 percent of the completion parts needed and if the situation is not corrected the nomenclature plan of the collective is likely to be disrupted with the passage of time. Such a situation is unacceptable under cost accounting conditions.

#### Personnel and Equipment

Certainly, in discussing the current situation at the Tbilisi Experimental Plant for Analytical Instruments, we must not overlook some of the more

important questions, in the opinion of the collective, the solutions for which are receiving considerable attention. We have already discussed the methods being employed here for adjusting relationships with allied workers. But indeed there are other aspects to the problem of quality.

Equipment. The more modern, productive and more accurate it is -- the fewer will be the complaints against the finished products. This axiom is well understood here. Moreover, the workers and leaders with whom we held discussions stated that it was not enough to merely understand the situation. In addition, active work was required. The very introduction of state acceptance has prompted the administrators to enter into more energetic negotiations with USSR Minpribor [Ministry of Instrument Making, Automation Equipment and Control Systems] and it has forced them into being more exacting and persistent and more accurate in computing the requirements for new equipment.

But these are just words. And what about facts and figures? Do they prove that today the problems of technical re-equipping are being solved in a new manner? Yes, the advances in this direction are quite noticeable. It is sufficient to state that last year the plant was allocated funds for only five machines and this year -- for 27 highly productive units.

It was not too long ago that a unique processing center was established at the enterprise for the purpose of producing complicated multiple-profile parts. The machine section with ChPU [digital program control] is being expanded. And understandably, an acceleration in scientific-technical progress requires first of all improvements in the skills possessed by the enterprise's workers. Special courses have been organized and the plant regularly sends its representatives to study leading experience at the branch's enterprises.

"The plan for turning over products to an organ of state acceptance" stated the director of the plant Georgiy Dugladze, "is being carried out by use." Almost 800,000 rubles worth of products were presented over a period of 2 months. There have been no rejected products as yet. But it is our belief: since our state acceptance instruments are still returning products for reworking (in January, 10 percent had to be reworked and in February -- 4 percent), that it is still too early to discuss the results.

Thus, in evaluating the changes taking place at the Tbilisi Plant for Analytic Instruments of the Analitpribor Scientific-Production Association, we are justified in stating that the goals established for the collective are large-scale in nature and that the means by which they are to be achieved here -- are for the most part means which are in keeping modern times. And a chief consideration is the fact that the enterprise's workers are striving in a new manner to evaluate their labor and the results obtained. This then is a reliable guarantee.

## Progress at Kiev Plant for Automatic Machines

Kiev RABOCHAYA GAZETA in Russian 11 Feb 87 p 2

[Article by P. Roshchin, state acceptance leader at the Kiev Plant for Automatic Machines imeni M. Gorkiy: "It Is Possible If Really Necessary; the First Steps at State Acceptance at the Kievskiy Factory of Automatic Machines"; first two paragraphs are source introduction]

[Text] In December, RABOCHAYA GAZETA published the socialist obligations for 1987 of the Kiev Plant for Automatic Machines imeni M. Gorkiy and for the five-year plan on the whole. The initiators of the republic competition planned high indicators for raising the quality of products. And they undertook actively to carry out this work. The introduction of state acceptance of products was of assistance in that it made it possible to proceed in the absence of the traditional slow preparations for work.

This service is headed by an individual who participated in the November conference in the CPSU Central Committee on the introduction of state acceptance P.A. Roschin. He has worked at the enterprise since 1974: as a foreman, deputy chief, chief of a department, deputy chief of the OTK [Department of Technical Control] and deputy secretary of the party committee.

Everyone understands why state acceptance began with machine building -- it provides machinery for all of the remaining branches of the national economy. That is, it serves as the chief means for the technical re-equipping of the country.

In solving the tasks for quality, the machine tool builders are following a long list -- indeed they are producing products for renovating machine building proper. In other words, the machines must surpass to a considerable degree other machines in accuracy and reliability and they must exceed their quality parameters.

Up until now, the plant's collective has on the whole succeeded in doing this. This is the seventh year now in which there have been no complaints regarding the products. All of the machines and lines are marked with the state Badge of Quality. On the foreign market, the Kiev machines are also valued for



their high accuracy and productivity. In short, they lead the field in all respects. Nevertheless...

Today the country requires new movement forward and yet it is being held back by problems which were not resolved yesterday. Here is the chief one of them: Under the pressure caused by use of the gross approach, the number of technological deviations is increasing with each passing year. These indulgences are occurring in departments and involve operations the results of which do not exert a direct effect on the accuracy or operational reliability of a completed machine. Gradually, the technological requirements have actually been divided into two parts: important and non-important. And the OTK has overlooked this situation through their fingers.

One of the first tasks of state acceptance has been to put an end to this double arithmetic. More and more of the rules and requirements are becoming non-mandatory in nature and less importance is being attached to the reliability and durability of the products and to the reputation of the plant mark.

Understandably, the use of such a dual approach, just as in other spheres of social life, will also inflict tremendous moral harm. In this instance, the border line between that which is legal and illegal is disappearing and the equality of all and each individual before the same law is being disrupted. In other words, the principle of social fairness, which is very dear to us, is being altered

Thus, as you can see, in addition to solving technical and production tasks, state acceptance is also making a contribution in the moral and political cleansing of the atmosphere for labor collectives and society as a whole. The decisions handed down during the January (1987) Plenum of the CPSU Central Committee are adding a new impulse to this general process. And as state acceptance workers, we are devoting a maximum amount of effort in the interest of carrying out the tasks assigned to us.

We are now beginning to overcome complacency. In October, for example, an entire batch of products presented for delivery in the third shop was returned. Certainly, this came as a shock and was viewed as an extraordinary event. However, in the absence of such a shock it is impossible to overcome the many years of sluggishness and lenience: both to ourselves and others.

An entire storm of offenses and indignations has arisen. Are we really bungling workers? And has the Badge of Quality been awarded to us for our pretty eyes? And did you not yourself produce such products yesterday? It appeared that these arguments and reproaches addressed to us were irrefutable. However, after the initial emotions had died down somewhat, rather convincing replies were provided for all of the questions.

Truly, a majority of our workers quite recently worked in plant services and shops and were in agreement with the output level which today they are not accepting. But indeed this was yesterday. Today, time is presenting new requirements. The organs of state acceptance have been created precisely for ensuring that they are carried out. And we simply will do nothing for those

who will not defend the interests of the state. And our machines are truly good. But they are good against a background of weak and incomplete machines produced by some other plants. And they must be compared not against the average but against the best models, not on the domestic but on the foreign market and not against machines for today but rather for tomorrow.

Thus, success has still not been achieved in overcoming this difference in the criteria for carrying out evaluations. Many repeat an old saying: ours are not worse than others, nor worse than yesterday. Even if we do not say it, but merely think thus -- a psychological slowing down of the restructuring is in effect.

"Well, enough said fellows" stated the chief of the shop P.I. Todorov, on still another day, "We already understand everything and can do no more. Let us now accept our own parts."

It was necessary to enter into a long explanation of the fact that state acceptance is not a scarecrow but rather a barrier against low quality products. And still the shop is not producing parts in accordance with the assigned parameters and we will not accept them. It was only after this that a portion of the defective products were rejected, the dimensions and purity of processing of the remaining products were improved to the required accuracy and we approved them for assembly.

Thus there was a twofold reaction to state acceptance. Initially, pleasure was taken in the fact that there was a sharp reduction in the number of defects noted in the units and parts. Indeed, this facilitates noticeably the work of the assemblers. But indeed, they themselves allowed deviations to occur at times. And when it became necessary to correct their own defects, the assemblers actually felt, although not in so many words, that quality was truly the task of each individual, a general task. And it must be solved by all together and simultaneously: the designers, technologists and economists, foremen and machine builders. The designers, for example, must ensure that their documentation is in strict conformity with the GOST's [state standards] and in addition to their current work they must submit thousands of drawings within a 3 month period. The technologists have even more such work to carry out. They have already completed the most important part and yet a great amount of work still remains to be carried out.

"Is it possible that all of the documentation was incorrect?" the question might be asked. No, the drawings ensured the production of sufficiently good products. And the main portion of the processing of documents amounted to reformulation and to converting over to modern designations.

But at the same time, the general "putting in order" revealed that some documents were obsolete and that some of the requirements were unnecessarily inflated and in conflict with one another. Moreover, such conflicts at times result from conflicts in the GOST's and other documents developed in the absence of adequate and mutual agreement. This portion of the questions has already been presented to USSR Gosstandart in the established manner.

Earlier, no special attention was given to such "minor" matters: in actual practice, it was easier to ignore a document than to bring about a change in it. Such forced violations were justified and also violations of another type: excesses in the cutting regimes for the sake of output and deviations in the dimensions and purity of processing of certain parts. Thus the dual arithmetic mentioned earlier was gathering strength.

Today the question is formulated as follows: either carry out the work strictly according to the drawings and the technology, or formulate and coordinate the changes if they are permissible.

The same holds true for one's own machines and instruments. Earlier, crude operations were often carried out on precision assemblies, regimes were disrupted, machines did not operate correctly and accuracy was lost. They were adjusted only when there were clear cases of defective products. Today a chief mechanic conducts a thorough inspection, defines the plant pool of machines for finishing operations and ensures the required norms for accuracy.

Just as at other plants, serious difficulties remain in the case of instruments. But earlier they were not resolved for years: our requests are not being carried out and that is it. Practical improvements are underway at the present time: some measures are being undertaken by the plant's skilled craftsmen, exchanges are being carried out with neighboring plants and, finally, promises have been made to provide some help from ministerial funds.

These changes -- an indicator of changes in our psychology, has started us looking again at old things. Indeed, there were problems the solutions for which, in our own opinion, required many years of work. For example, the most accurate grinding machine at the plant produces a tolerance of 2-3 microns. But a control chuck for measuring especially important products must have an accuracy of one half micron -- almost twice as great. Is it possible to make such a chuck? For many years the reply was negative. And when they halted the acceptance, the task could be solved in just 3 days: the best grinding specialists "achieved" the required accuracy on the tips of their fingers as the saying goes.

Certainly, all of the problems which have accumulated over a period of many years cannot be solved in just a few weeks. But the initial experience reveals that much can be accomplished immediately where a real need exists. And a real possibility exists for rapidly solving the remaining problems. In other words, the goal is apparent, the possibility of achieving it is real and progress towards reaching that goal has commenced. Our common task is to accelerate this movement.

## First Quarter Results

Baku BAKINSKIY RABOCHIY in Russian 18 Apr 87 p 3

[Interview with V.K. Kasuov, chief of the Azerbaijan Republic Administration for USSR Gosstandart by a correspondent of Azerinform; date and place not specified: "Results of the First Quarter." ; first paragraph is source introduction]

[Text] Thus, three months of work under the conditions of state acceptance of products are now behind us. Thirty one enterprises throughout the republic were the first to become acquainted with the difficulties of restructuring, brought about by the new form for non-departmental control over quality. The operational results of various enterprises during the first quarter reveal the difficulties encountered by the collectives in evaluating the essence of the work carried out under new conditions. At the same time, an analysis of their work during this period allows us to draw some very definite conclusions. The chief of the Azerbaijan Republic Administration for USSR Gosstandart V.K. Kasumov has provided the following answers to questions asked by a correspondent of Azerinform.

[Question] Vagif Kasumovich, prior to discussing the problems encountered with the introduction of state acceptance, could you not mention briefly the operational results of enterprises during the first quarter.

[Answer] The results of the first quarter allow us to draw the conclusion that initial positive results have already been realized despite the fact that we are still encountering difficulties in carrying out the work. In those areas concerned with improving the quality of products, the enterprises are carrying out more purposeful work, products are being presented to the new organ in a rhythmic manner and the proportion of goods accepted upon initial presentation has risen. In March, the number of rejected products declined by a factor of roughly five. However, the results are still far from those desired. Although the plans called for 444 million rubles worth of products to be presented for state acceptance, the actual amount presented was 407 million rubles worth, with 399 million rubles worth being accepted.

[Question] In your opinion, what is the chief reason for non-fulfillment of the established volume?

[Answer] Beyond any doubt, the fact that in those areas where thorough preparations were made for the introduction of state acceptance, there was no reduction in the work performed by the collectives. One can cite such enterprises as the Baku plants for domestic air conditioners and refrigerators, the Sumgait Combine for Polymer Construction Materials, the Orgsintez PO [production association] and the Shchekino Silk Production Association, where the proportion of products accepted upon initial presentation amounts to more than 97 percent. However, there are many examples of situations in which state acceptance aggravated many production problems and put an end to the imagined well-being of the collectives. As a result, the national economy failed to receive 36.7 million rubles worth of products. The number of debtors included the enterprises of Glavneftemash,



the Azerbaijan Pipe-Rolling Plant, the Baku Plant for Heavy Electric Welding Equipment, the Kirovabad Instrument -Making Plant, the Baku Plant for the Processing of Ferrous Metals and others.

It must be confessed that in all of this a portion of the blame is borne by workers attached to the republic's administration for Gosstandart [State Committee for Standards of the USSR Council of Ministers], who failed to supply adequate assistance to all of the enterprises making preparations for work under the new conditions. During the course of inspections carried out by our specialists, superficiality was often tolerated. Sluggishness and reliance upon antiquated methods produced a certain stereotype in the shortcomings uncovered. Such a situation quite often precluded the possibility of establishing the true status of affairs in the various areas. It bears mentioning that today the process of restructuring within the Gosstandart system has been enlivened considerably. A number of organizational changes have been carried out, much has been accomplished in connection with increasing the personal responsibility of administrative workers for the status of affairs at enterprises and we are beginning to handle the problems of personnel placement in a more high-principled manner. Today this is all producing meaningful results.

[Question] What can be said regarding the relationships between the representatives of the new organ and the collectives of enterprises where state acceptance has been introduced into operations? Are they equal to the occasion in all areas?

[Answer] It is not easy to provide a simple answer to this question. Actually, ideal relationships require ideal collectives and ideal state acceptance specialists. However, these conditions are met only rarely. And if we look backwards, that is, to those times when these relationships were difficult, then we note that one of the causes quite often was the mistakes made in selecting the state acceptance personnel. For example, in the organs of state acceptance at refrigerator plants, the Seventh State Bearing Plant and the Novo-Baku Petroleum Refining Plant imeni Vladimir Ilich, there were personnel who were not sufficiently competent and who were accepted for work in the absence of consent by the rayon and municipal party committees. Moreover, at the Baku Plant for the Processing of Ferrous Metal Alloys there was one individual who at one time had been discharged from this same enterprise because he could not be trusted. Such mistakes in the selection of personnel regularly result in conflicts and they tend to discredit the very idea of non-departmental control.

At the same time, it often happens that complications arise as a result of failure to carry out the measures and instructions of the state acceptance organs in a timely manner. Thus it is readily apparent that not everybody is aware that state acceptance is a new form of state control over quality, one which has completely independent functions and rights and is not to be considered as an adjunct to an enterprise's OTK [Department of Technical Control] service. In particular, this was the object of attention by the leaders of the Radiostroyeniye BPO, where the instructions of the state acceptance organ were not carried out, instructions which were issued during a joint session of the bureau of the Shaumyanovskiy Rayon Party Committee and

the council of the republic's state acceptance administration. Similar incidents occurred at a number of other enterprises.

Fortunately, we have considerably more examples showing how state acceptance earned the genuine respect and trust of a collective and became its assistant in solving vital problems. Examples of interested participation by state acceptance workers in eliminating shortcomings and their active influence in raising the technical level of products can be found at such enterprises as the Bakinskiy Rabochiy Machine Building Plant, the Seventh State Bearing Plant, the Sumgait Combine for Polymer Construction Materials and a compressor plant. It is obvious that many unsolved problems still remain and many shortcomings have accumulated over the years which the forces of an enterprise and state acceptance are unable to solve. In such cases, assistance is required from the appropriate ministries and departments.

[Question] It is known that many complications have arisen at enterprises as a result of objective factors: the products being received from allied facilities which are not under the jurisdiction of state acceptance are often of low quality. But indeed an enterprise loses time that cannot be made up. Is there a solution for such a situation?

[Answer] It must be stated that such a situation is by no means beyond a solution, as many enterprises would have you believe. Rather, the problem here is more one of ensuring that the OTK, the organs of state acceptance and also the management of an enterprise make use of the rights extended to them. For example, upon a signal from the OTK, a territorial organ of Gosstandart is authorized to establish, at enterprises producing low quality products, a special regime for use up until such time as order is restored. However, such signals are issued extremely rarely. Thus, prior to citing these so-called objective factors, use must be made of all available levers and the means and methods for implementing legal and administrative actions must be mastered well.

[Question] Concerning the OTK. How do you explain the fact that the experience of the Bazel'ektrobytpribor Association in intensifying the role played by the OTK, which is known throughout the country, is being employed only weakly at enterprises throughout the republic?

[Answer] Yes, this is true. Only ten of our enterprises are undertaking real steps aimed at increasing the material incentives for OTK workers and raising the prestige of workers in this profession. And indeed this was pointed out in the well known decree on measures for radically improving the quality of products. Work concerned with restructuring the technical control services at the Baku Factory for Fashionable Shoes, plants for high voltage equipment, dry transformers and highway machines and also enterprises of Glavneftemash [Main Administration of Petroleum Machinery Manufacture] is being carried out in an unjustifiably slow manner. And this is just one of the many problems troubling those enterprises which made no preparations for work under the new conditions. It would be absurd to attempt to justify their actions. Nobody was released from having to carry out the decree. And here it is my opinion that the ministries, departments and party organs must require the enterprise managements to carry out the requirements set forth in the party documents.

[Question] Vagif Kasumovich, you were among those leaders of territorial organs of Gosstandart who participated in the preparation of the draft USSR law on product quality. What are the new features of this law with regard to regulating rights and responsibilities for raising responsibility for the quality of products?

[Answer] First of all, the very idea of adopting such a law was a logical development of the program adopted by the party for radically improving the quality of products and having them conform to the highest international scientific-technical level. It is stated directly in the draft -- and it is not likely that this statute will be revised -- that the products developed and produced in the USSR must conform to the international level or surpass it. This is the basic intent of the law and it is reflected in all of its sections and articles, which clearly regulate the legal responsibility of all elements of the economic mechanism for the production of high quality products both horizontally and vertically: the law must become the basis for carrying out a uniform state policy in connection with raising the technical level and quality of products.

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## RECONCILING ECONOMIC CENTRALISM, INDEPENDENCE CONCEPTS

Moscow PLANOVOYE KHOZYAYSTVO in Russian No 3, Mar 87 pp 47-56

[Article by V. Ivanchenko, doctor of economic sciences: "Centralization and Independence in an Integrated Economic Mechanism"; first paragraph is source summary; passages within slantlines published in boldface]

[Text] Centralized planning is the most important advantage of socialism. A uniform methodology is needed to govern the organization and technology of planning for central economic authorities, ministries, associations, and enterprises. Development of independence of the basic entity must be based on a change in its role in centralized planning and management.

The relations of conformity to plan, centralized management on the basis of a single state plan, which is the most important advantage of socialism, are objectively inherent in a socialist economy, which is based on public ownership of the means of production. Moreover, as the productive forces develop, as the scale of the economy increases, and as the structure of the unified complex of the national economy becomes more complicated, the role of centralized planned management of the economy increases incomparably. In our view, /it is an erroneous conception that/ in the context of a large-scale economy, the intensive type of economic development, and more dynamic production and economic processes /decentralization of management of the economy becomes an objective necessity and centralism loses its advantages under the impact of the scientific-technical revolution. Assertions that centralization of planned management is superfluous do not seem to reflect the essence of the changes taking place in the economy./ Such assertions are related to an oversimplified treatment of the principle of democratic centralism as a system of vessels connected by siphons: more centralism--less democracy, and conversely, more democracy--less centralism. Such approach in theory and in practice results in a simple opposition of the two principles in the operation and dialectical development of Lenin's most important principle of management in the context of socialism. Some people feel that as the process of socialization of labor and production becomes more intensive, there is an objective increase in the role of centralized planned management, while others speak on the same basis of a strengthened role of democracy, of a need for a corresponding limitation on centralism in management. The reference here is to /expansion of the economic independence of enterprises and associations, the development of self-management and other forms of



democratization of planning, management, and methods of carrying on economic activity/.

If we add that economic methods of management are not by any means bound up with /relations of conformity to plan/, which /are quite often identified with administrative methods of management/, but with commodity-money relations and the development of cost accounting [khozraschet] at the level of the basic entity, then /the opposition of centralism and democracy to one another is also reinforced by the opposition set up between administrative and economic methods of management, between conformity to plan and commodity-money relations/.

It would seem that after the April (1985) Plenum of the CPSU Central Committee and the 27th party congress there is no basis whatsoever for such opposition of relations, categories, and principles, whose purpose it is to shape an integrated economic mechanism suitable to present-day conditions and to the goals of accelerating the country's socioeconomic development. The CPSU Program (new version) lays bare the essence of the principle of democratic centralism as a unity of both its principles--increasing the effectiveness of centralized management and a substantial expansion of economic independence and responsibility of associations and enterprises. It emphasizes that /the level of socialization of production and of its planned organization is to be increased by realizing the advantages and possibilities of public ownership and the socialist planned economic system/. At the same time it notes the need to make planning more effective as an instrument for realizing the party's economic policy. In this connection it calls attention to the fact that /the following are expected of planning/: to be an active instrument for accelerating the country's socioeconomic development and for intensification of production on the basis of scientific-technical progress; to provide comprehensive solutions for economic and social problems; to organically combine long-range, 5-year, and annual plans. At the same time there is also a need to develop and /increase the effectiveness of cost accounting/.(1)

It follows from these programmatic principles that the new economic mechanism is called upon to reveal the categories of ownership, conformity to plan and commodity-money relations in economic, organizational, and legal forms of their realization, and to shape an integrated system for the conduct of economic activity in which there is organic unity, contradictions and subordination, but no opposition. This system must function, develop, and improve on the basis of dialectical resolution of nonantagonistic contradictions and forcible removal of the contradictions distorting its socioeconomic essence and purposive orientation. It would seem that only on the basis of this approach to improving the economic mechanism is it possible to correctly understand and realize in practice the principles of the 27th CPSU Congress on simultaneous improvement of the effectiveness of centralized management of the economy, a strengthening of the role of the center, and a determined broadening of the boundaries of independence of associations and enterprises.

## 1. Centralism: Content, Functions, and Restructuring

The content of centralism, which is imposed by public ownership of the means of production, develops under the influence of the process of a deepening of the socialization of labor and production, of development of the productive forces and of improvement of production relations. But distorting factors (subjectivism, bureaucracy, formalism, failure to observe the fundamental principles for building socioeconomic systems of economic activity in the context of public ownership of the means of production) may insert themselves into the patterns of movement of centralism as an integrated system for the organization of social production. This detracts from the capability of the system of centralized planning to react vigorously to acceleration of scientific-technical and socioeconomic processes under the impact of the scientific-technical revolution. Quite often this distortion of centralism, which is manifested in imbalance, shortages in the economy, low production efficiency, is perceived as an organic deficiency of the planned system itself. Which accounts for the opposition set up between the conformity to plan and commodity-money relations, between the plan and the market, and so on, instead of elimination of the distorting factors, creation of conditions for attainment of correspondence of the form of management to the content of the initial relations of an integrated system for economic activity.

The 27th CPSU Congress set forth in a profound and scientific way the real achievements and advantages of the plan system for conducting economic activity and the negative manifestations of its distortion, of the lag behind the level of development of the productive forces and production relations in solving the problems of intensification, labor productivity, lowering the resource-intensiveness of production and increasing the quality of the product produced. Which accounts for the task of restructuring the economy and the economic mechanism. "In view of the demands made by reality," states the Policy Report of the CPSU Central Committee to the 27th party congress, "certain theoretical notions and conceptions need to be looked at in a new way. This applies to such major problems of interaction between the productive forces and production relations, between socialist ownership and the economic forms of its manifestation, commodity-money relations, the combination of centralism and independence of economic organization, along with others."(2)

A new view also needs to be taken of the content of centralism and of its functions in restructuring the economic mechanism. First of all, centralism cannot be reduced merely to arraying the targets, the indicators, and the resources from top down, much less to a procedure in which sectoral authorities of management merely pass down instructions, and the response comes back up: "Yes, it shall be done." In this conception of centralism irresponsible and economically unjustifiable attitudes and an equally irresponsible performance or, more accurately, nonperformance, quite often concealed by padding, are inevitable.

/The centralism of the planned system of management is democratic centralism, which presupposes the real participation of the working masses and work collectives in planning, in drafting the plans, and in organizing their fulfillment./ Here the broadening of the rights of the enterprise is not

restricted by any means to the growth of independence in taking economic decisions, by full cost accounting, but is determined above all by its abilities to shape its own plans in the interests of society, a particular consumer, and the work collective's own interests--consequently, to be an inseparable unit in centralized planning. In this approach independence does not contradict centralism. More independence does not signify less centralism. It is the very forms of the realization of centralism and the functions of all the structural units in planned management that are undergoing change. Yet at present insufficient attention is being paid to the new forms for realization of centralism in its theoretical and practical aspects, since the problem is mainly being viewed from the positions of a limitation of centralism, of transferring a number of functions of centralized planning and management to lower levels, above all to the basic entity in the hierarchy for management of the economy. What do we see as the limitation of such an approach to the problem of centralism? First of all, the limitation of centralism, decentralization--this is a purely quantitative approach to the problem of planned management. The main thing is not more or less centralism, but the forms in which its advantages are realized, i.e., the qualitative possibilities.

Second, the transfer of functions from one level of management to another when there is no real change in the essence, content, place, and role of each tier in the system of planned management reflects a formal approach to restructuring the economic mechanism. Which is not even to mention the transfer of functions. There has to be a change in redistribution of functions in the system of management linked to the qualitative changes in the productive forces and production relations. Take, for example, the problem of decentralization of planning based on relieving USSR Gosplan of current planning and of regulating production and distribution and other day-to-day matters. On the one hand the aim is to limit the centralization of planning by transferring functions of current regulation of production to other levels, above all to the level of the basic entity, while on the other it is to concentrate the attention of USSR Gosplan on the problems of the future, of refining the structure and proportions, of the location of production. It would seem that the problem is considerably more complex than merely a transfer of functions and giving relief to the upper echelon of planned management. More complicated because the essence of the matter does not lie in decentralization, but in using new forms of democratic centralism in planning and in management.

/Strengthening the effectiveness of centralized planning requires a new approach to its content, to achieving relations of conformity to plan in the methodology, methods, technology, and organization of planning and accordingly it requires a reexamination of the functions of all the participants in the planning process./ But in addition planning as a socioeconomic process implements the system of production relations and is consequently bound up with contradictions, with a system of interests, with the human factor. Planning is concerned not only with the entities being managed, but also with entities which carry on economic activity in their own right. That is why a planned economy and the mechanism for its management are the most complicated of all known to humanity. It would seem that its content and complexity have so far not been grasped by any means, much less studied. It is not difficult



to see that this is so. Let us look at the methodological support of centralized planning. There is a certain textbook literature here, mainly elucidating the traditional methods and organization of planning by functional, sectoral, and regional blocks. There are instructions as to methods of drafting state plans for economic and social development, and separate methods for program planning and for the use of the methods of mathematical economics in planning. There is an extensive literature on optimization of planning decisions and on long-range forecasting. But no theory or methodology of planning has yet taken shape as a /system for planned management of development of the productive forces and production relations based on public ownership of the means of production, including management of scientific-technical progress and economic and social processes in their organic interrelationship/. There is a uniform technology and organization for substantiating the production of any product, even a simple one, but this cannot be said at present of such a complicated process as planning society's socioeconomic development. This gap is made up for by instructions as to methods which are essentially addressed only to the planners in the middle tier of management--ministries and departments. At the level of the national economy, in the USSR Academy of Sciences, there are scientific centers for the theory and for methodology in practically all the spheres of activity except planning. USSR Gosplan, which is expected to become a scientific-economic command staff, still does not possess a unified methodological center: the various problems of methodology are dealt with in its five institutes and the GVTs. Meanwhile /the task of developing a uniform technology of the process of planning that reflects the present level of development of science and technology and the new role of associations and enterprises in planned management has become urgent/. Without that kind of technology it is hardly possible to find optimum regimes for the extremely complicated process of making scientifically sound planning decisions.

Thus before redistributing functions in planning, there is a need to define the changes that have become necessary in the content of planning work on the scale of the national economy.

Restructuring the activity of central economic authorities, above all USSR Gosplan, can obviously move in this direction in order to create a specific mechanism for solving the problems of the future of scientific-technical, economic, and social growth, of a progressive structure, and of proportionality and balance in economic development. It means above all that national economic planning should be oriented toward carrying out the party's economic policy in the domain of shaping the country's qualitatively new productive forces. Radical improvement of the economic mechanism comprises another set of tasks of economic policy. The relations of conformity to plan and the system of economic laws expressed in the system of plans are expected to guarantee the dialectical linkage of these lines of economic policy, since solving the problems of the former line constitutes creation of potential opportunities for acceleration of socioeconomic development. Utilization of these opportunities is guaranteed by including the human factor in this process on the basis of an integrated economic mechanism. Consequently, it is not only the problems of the future, of proportions, of structure, and of balance that must be solved in a planned manner at the level of the national economy, but also the problems of the effectiveness of the economic mechanism.



Which leads to the first important conclusion about changing the content of centralism, centralized planned management, and operation of central planning authorities, above all USSR Gosplan.

/The content of the work done by central planning authorities should be not merely working out planning targets, breaking them down, and monitoring fulfillment of plans, but also the planned management of the country's socioeconomic development, the qualitative improvement of the productive forces and production relations, and accordingly of the material and technical base and the economic mechanism./ Consequently, the decisive role would be assumed not merely by the plan and its fulfillment, but by the goals of plans and by their attainment. Central planning authorities are responsible to a society for the final results, which are embodied and realized in the system of centralized planned management (the plan, prices, the financial and credit mechanism, relations in distribution, exchange, organizational structures, personnel, etc.).

It is clear that the system of planned management cannot fail to rely on a uniform methodology, a uniform conception of its development and of its improvement in which a set of methodological developments would be developed--conclusions and principles concerning planning, prices, finance, statistics, and accounting, based on common principles and goals. The essence of this planning methodology consists, first, in the fact that all the structural elements will be developed under the direction of USSR Gosplan as initial principles of economic policy and principles for its conduct, including the problems of accelerating scientific-technical progress, in an interrelationship with the policy of reproduction and structural policy and with improvement of the credit mechanism and pricing. Of course, the GKNT, Minfin, and Goskomsen will take part in the effort, but on the basis of the uniform national economic methodology, not departmental approaches, which frequently are not linked to one another and even run counter to the ultimate goals of the plans being drafted, especially the tasks of intensification of production and improvement of structure and balance. Second, a methodology is shaped for conducting that policy at the level of the national economy, at the levels of sectoral and regional planning and of the basic entity--associations and enterprises. With respect to the ultimate goals this is a uniform methodology for centralized planning in which each level does not merely break down the goals as indicators and standards and allowances at the level of the national economy in accordance with planning decisions already made, but is an inseparable participant in the process of shaping optimum plans, with their own functions and their own information. The system of target programs, balances, and standards and allowances comprises the basis of planning at the level of the national economy. This is a fundamentally new approach to centralism, to its content, and to the methodology of planned management. To illustrate we will examine two fundamental problems of centralized planning--planning the development of science and technology and planning the production of an industrial product.

As is well known, the Guidelines as to Methods of USSR Gosplan has devoted a separate section to planning the development of science and technology. The drafting of the Comprehensive Program for Scientific-Technical Progress is making its contribution to laying the scientific foundation for planning NTP.

It would seem that all the prerequisites exist for making optimum planning decisions on this matter at the level of the national economy. But in fact it is on the lag in the technical level of a number of sectors and production operations that solving the problems of intensification, efficiency, product quality, and acceleration of socioeconomic development is based today. Noting this, the 27th CPSU Congress put in first place among the basic directions of economic policy the task of carrying out the reconstruction of the national economy on the basis of scientific-technical progress.

Much attention is being paid in research on the problems of NTP and the economic mechanism to the problems of enterprise motivation for technical improvement of production and incentives. This is, of course, important. But /the decisive thing in NTP has been and remains centralized planned management directed toward application of technical innovations/. If there is no progressive engineering and technology on a sufficient scale, there are no incentives that can serve as a substitute. But at the same time if the new and most recent technology is aimed only at construction of enterprises, there is no initiative that will guarantee acceleration of retooling. Moreover, if yesterday's technology is embodied in production plans and disseminated, the newest technology will not emerge. All of these problems can be solved centrally, at the level of the national economy, provided a uniform planning methodology is used at the level of USSR Gosplan, a methodology that eliminates planning decisions in the domain of NTP and reproduction which do not conform to economic policy. Instructions as to methods and appeals are insufficient here, as we see. The main thing is for the entire cycle of efforts related to NTP to be linked through the methodology into a single whole. Up to now the problems of basic research, structural design and process engineering, and pilot production have been solved separately from one another. Plans for development of science and technology have been limited to measures and assignments for developing and applying prototypes of new equipment. The problems of series and large-scale production of machines and machinery (the production plan) have been solved separately. There has been separate planning of retooling and reconstruction of enterprises (plans for capital investments and capital construction). Reality has advanced the problem of making the transition to a system of machines for each branch of machinebuilding, but its solution has not taken on the final forms of planned management. Problems of depreciation, of renewal of fixed productive capital, and of updating the product produced have been taken up locally, detached from the problems of NTP. Finally, the problem of evaluating the yield and effectiveness of NTP at the national economic level, i.e., in the stage of selecting optimum planning decisions, in the stage of working out the system of balances, rates and allowances and standards, has not been solved in its essence, since the methods of evaluating the efficiency of NTP are aimed at only determining the calculated efficiency of the particular prototype of new technology that has been taken, not at raising the technical level of production.

All of these questions can be given specific treatment on the basis of /a uniform planning methodology in which the particular technical level of production and its efficiency would become the decisive criterion in making decisions at all levels of planning/. In other words, unless the criterion of attaining a certain technical and economic level of production is applied, it

is difficult to guarantee the results desired in planning scientific-technical progress. It is a question of /a universal state criterion, of state assessment of planning decisions to be made in accordance with the requirements of society/. In this approach the plan for NTP, for production, and capital construction comprises a single and continuous whole embodying the cycle of reproduction--the entire circulation of fixed productive capital.

Consequently, the planning of NTP presupposes not only developing new technology, putting it into production, and applying it, but also attainment of the goal of the entire state--maintaining the optimum technical level of social production as a whole so as to meet the requirements of acceleration of socioeconomic development. The planning of capital investments, then, is subordinated not merely to development of production capacities, but also to guaranteeing in every cycle of reproduction a qualitatively new level of the productive forces and the material and technical base of socialism. Here the principal criteria are progressive structure, quality, and a saving of worktime in every respect. Moreover, the uniform methodology must make provision for methods of accelerating NTP, and of taking interests into account; consequently, it is also necessary that it reflect the systems of depreciation, financing by appropriation, credit financing, pricing, and incentives. It also encompasses the questions of production specialization and standardization. Otherwise we cannot speak seriously about an approach to NTP from the standpoint of reproduction. This is the new content of the methodology for planning and for organizing activity in the domain of NTP with respect to the entire national economy.

It follows from what we have said that /the criterion in restructuring the effort of USSR Gosplan, the GKNT, USSR Minfin, and USSR Goskomsen is guaranteeing the reproductive approach to scientific-technical progress, which is the main factor in shaping a progressive structure, in intensification, in the rise of efficiency of social production, and in acceleration of the country's socioeconomic development. It is particularly important here to interlink the functions of USSR Gosplan and the GKNT.

/The methodology for centralized planning at the level of USSR ministries/ in accordance with this criterion includes substantiating the solution of problems of reproduction on the basis of NTP in sectors and regions so as to take into account the tasks of the national economy. It has to be acknowledged that /until recently the present ministries, in spite of the status of central management authorities, were mainly concerned about expanded reproduction of departmental potential on an extensive basis/. Combination of the national economic, the sectoral, and even more the regional approaches to expanded reproduction of the social product on the basis of scientific-technical progress has not always been achieved. There are problems that need to be solved here. They include developing and applying a system of machines guaranteeing full mechanization and automation of production in the sector (and in the case of the machinebuilders for other branches as well), including the production infrastructure. Then there are the problems of specialization and standardization, of achieving the world level of engineering and technology and product quality, and also of developing intersector and international cooperation in the domain of NTP. The role of ministries needs to be emphasized in carrying out state programs in the domain of NTP, in



energy and resource conservation, and in environmental protection. These problems are organically bound up with the reproductive approach to NTP.

It is /an important problem of ministries/ to study needs and to furnish the economy and the public high-quality products from the sector, but this cannot be done effectively without reproduction on the basis of the most up-to-date equipment and processes. That is why the main content of the work of ministries should now be guaranteeing the dynamic nature of the reproduction of the sector on the basis of NTP, studying the needs of the economy and the public for the product produced, and meeting those needs. This gives rise to the need to alter the functions and structure of sectoral management agencies. The USSR ministry is an agency for centralized long-term management of the sector's development, not a department for current supervision of enterprises.

## 2. The Problems of the Independence of the Basic Production Unit

/At the level of the basic unit/--production associations and enterprises--the uniform methodology for planning NTP is called upon to orient their economic activity in the context of full cost accounting and self-financing not toward the current results of the moment, nor even toward the results of annual activity, but toward a definite contribution of each collective to attainment of sectoral, regional, and national economic goals--raising the technical level of production and production efficiency in order to speed up socioeconomic development. The cost-accounting interest of work collectives themselves should be interlinked to that approach. Systems of economic rates and standards, state depreciation policy, pricing and credit and financial relations should be aimed at achieving that.

The technical level of production (the share of output produced on the basis of the most up-to-date equipment and processes) and the actual efficiency of production, which makes it possible to expand reproduction with internal resources and with bank credit if necessary, become the determining characteristics of real restructuring of the operation of any enterprise on the basis of NTP. The enterprise must solve all these problems under the influence of economic standards and allowances and cost-accounting relations on the basis of statewide and sectorwide programs for the planned rise of the technical level of production and for reproduction on the basis of the most up-to-date equipment and processes. In this effort associations and enterprises represent not only a center for day-to-day management of production, but the most important unit in the multiannual planning of production.

Now we turn to planning production from the positions of a single methodology. There are millions of products in the economy. It is a practical impossibility to centrally plan this great diversity of products, especially in view of the dynamic nature of demand and supply and of quality and time parameters. No one even aspires to do so. That is the reason for development of classifiers of product nomenclature, nomenclature groups, and principles for consolidating and detailing nomenclatures. Moreover, it has become common practice in planning to work out balances and plans of product distribution and to adopt a consolidated product nomenclature at the highest--statewide (national economic) level, including the level of USSR Gosplan and USSR

Gossnab, at the middle level--ministries and departments, and at the level of associations and enterprises. But this system generates irregularities, and the reasons are not exclusively subjective.

The process of detailing a nomenclature from the top of a chain downward (USSR Gosplan--USSR Gossnab--the ministry--the association--enterprises) comes up against immense difficulties in practice in the very stage of drafting plans. What in computational terms has been balanced in the consolidated nomenclature at the statewide level turns out not to be balanced in the subsequent stages of detailing (with respect to production capacities, completeness of components, availability of materials, real need, delivery dates, etc.). At the level of enterprises all of this is compounded by specific requirements as to assortment and quality and time parameters (especially for new products). This kind of system has not been adapted to the dynamic nature of demand and supply nor to the influences of NTP. It does not afford the possibility of real linkage of the physical embodiment of the planned volume of output to the value estimates of that volume. As a consequence the real shortage combines its effect with that of the shortage artificially created both with respect to output and with respect to production capacities, while at the same time there is a constant growth to immense proportions of production stock of physical resources the enterprise does not need and for which there is no demand from consumers of finished products. Under those conditions the way out is seen in enhancing the role of the primary unit in the drafting of plans, in thorough study at the sectoral level (by ministries) of the needs of the public and the economy for particular products, and in the planned creation of conditions for meeting those needs. At the same time it is important to revise the characterization of enterprises as to profile and the scheme of direct economic relations, to establish assortment lists of products for the 5-year period for which they are required to conclude contracts with consumers (customers). It is important in establishing direct economic relations to designate the head enterprises for output of sophisticated products and for the entire structure of industrial cooperation.

On the basis of this methodological approach there is a need to analyze changes in the effort of planning agencies, ministries, regional authorities, associations and enterprises along other lines of implementing economic and social welfare policy. It is important to clearly define the head functions of councils of ministries of union and autonomous republics and of local soviets of people's deputies in planning and management so that in the methodology, technology, and organization of planning in the system of economic relations and incentives the regional structure, as a most important segment of the unified national economic complex and the division of social labor and production, takes up the place that it is objectively entitled to.

It is a question of such functions as comprehensive development of the republics and other regions in the structure of the unified national economic complex, improvement of the production and social infrastructures, optimum utilization of natural and labor resources and productive potential, utilization of production waste, coordination of efforts and regional programs for NTP, the Food Program, development of the APK, and the solution of social welfare problems.

Thus enhancement of the role and effectiveness of centralism in planned management necessitates a change in the content of work and redistribution of functions in planning and planned management of central planning authorities, ministries, regional planning agencies, and local soviets of people's deputies, and associations and enterprises on the basis of the following:

i. development of a uniform methodology for the organization and technology of planning covering the macrolevel, ministries, the regional segment, and associations and enterprises;

ii. embodiment of the head functions for each level of planning and management in legislation;

iii. renouncement of the system of arraying indicators and targets from top down;

iv. widespread use at the national economic level and the level of ministries of economic methods of planning and management, a system of programs for technical, economic, and social development at all levels and the drafting of fully balanced plans from below, reflecting real needs for specific products and the potential for meeting those needs on the basis of a system of orders and direct economic relations among enterprises, associations, ministries, and regions.

Development of independence of the basic entity should be based on altering its role in centralized planning and management, not only on broadening the opportunities for participation in day-to-day management of production, for negotiating economic maneuvers, and for full cost accounting. Achieving the relations of conformity to plan at the level of associations and enterprises in close interaction with commodity-money relations figures as the cornerstone for expanding enterprise independence. In the domain of technical improvement of production, the updating of products produced, and performance by the collective of the social problems contained in sectoral, regional, and national economic programs, associations and enterprises, just like the higher levels, rely on planning multiannual development and on their own participation in centralized planning and management.

The boundary on the economic independence of associations and enterprises would seem to be represented as follows:

a. /in the domain of production/--satisfying the needs of specific customers and consumers for a high-quality product being produced (in accordance with the specialization of the sector, the relationships established, and the orders accepted);

b. /in the domain of reproduction/--implementation of national economic, sectoral, and regional scientific-technical and structural policy in carrying out retooling and reconstruction of production, specialization of production on the basis of the respective program, and so as to take into account resources placed at their disposition to achieve the necessary rates of development of the productive potential.

The boundary on independence is defined by economic standards and allowances and the principles governing distribution of income, which form the resources for the collective's social and economic development.

#### FOOTNOTES

1. "Materialy XXVII syezda Kommunisticheskoy partii Sovetskogo Soyuza"  
[Materials of the 27th Congress of the Communist Party of the Soviet Union], Moscow, Politizdat, 1986, pp 148-149.
2. Ibid., p 38.

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## GOSSNAB OFFICIAL URGES MORE MATERIAL RECYCLING

Moscow MATERIALNO-TEKHNICHESKOYE SNABZHENIYE in Russian No 3, Mar 87 pp 56-60

[Article by V. Odess, deputy chief, Administration of Secondary Resources, USSR State Committee for Material-Technical Supply (Gossnab): "Improve the Waste Utilization Mechanism"]

[Text] The conservation of material resources acquires ever greater significance under present conditions. The lowering of expenditures of raw materials and supplies per unit of output based on the utilization of advances in science and technology and the recycling of production and consumption waste has become a key factor in making the transition to intensive methods of economic management.

The role of secondary resources as a major factor in resource conservation is steadily growing. During the last five-year plan alone, approximately one billion tons of production and consumption waste were recycled in the national economy. This figure does not include 10 billion tons of striprock and enclosing rock used for filling in mines or for other purposes. By the year 2000, many types of secondary raw materials will become prime sources of raw materials for a number of branches of industry (metallurgy, construction materials, pulp-paper, and certain others). The replacement of primary resources by secondary resources makes it possible to conserve a considerable quantity of raw materials, supplies, fuel, and energy.

The use of secondary material resources has now become a key technical and economic task. We should also consider the growing need to protect the environment against pollution with waste. The intensive use of secondary raw materials reduces the amount of land that is taken out of agricultural circulation for use as dump sites, sludge collection sites and other waste concentration points and also reduces the volume of harmful effluents discharged into the environment. It is sufficient to note that the production of a ton of steel from scrap metal instead of from primary raw materials reduces the environmental pollution potential by 85 percent and that the use of a million tons of waste paper in the production of paper and cardboard reduces the volume of harmful waste by 30,000 tons.

However, existing reserves for utilizing secondary raw materials are still not being completely used by any means. The national economy's waste procurement



and processing organizations and enterprises are still not handling a considerable share of the existing resources of this valuable raw material. Even though the use of secondary raw materials in 1986 resulted in a saving of more than 13 billion rubles' worth of primary raw materials and supplies, the level of recycling of waste is still insufficient. Thus, the level of utilization of individual types of secondary raw materials in 1985 is characterized by the following data: waste paper--63 percent of the potential; secondary textile materials--52 percent; secondary polymers--32 percent; worn-out tires--24 percent. Shortcomings in the existing economic mechanism should be mentioned among the principal reasons for such a situation with respect to the utilization of secondary resources. Attention was also focused on this point in the 3 July 1985 decree of the USSR Supreme Soviet "On Observing Legislative Demands Regarding Nature Conservation and the Rational Use of Natural Resources" which noted that the economic mechanism is doing little to increase the motivation of industrial, agricultural, and construction organizations to implement nature conservation measures, to make integrated use of raw materials, and to recycle production waste.

Where are the shortcomings in the existing economic mechanism manifested in its influence on the recycling of secondary resources? In our opinion, such shortcomings are inherent in almost all elements of the economic mechanism: in the planning of waste utilization; in the economic stimulation and responsibility of participants in the procurement and processing of secondary raw materials; and in the organization of management of this process.

With the conversion of virtually all branches of industry, construction and agriculture to the new conditions of management starting in 1987, there was a considerable reduction in the number of items on the list of planned secondary raw materials and in the number of indicators in the "Utilization of Secondary Resources" section of the State Plan for the Economic and Social Development of the USSR.

Under these conditions it is essential that USSR Gosplan develop new guidelines for planning indicators in the section of the plan devoted to the "Utilization of Secondary Resources" both for the national economy as a whole as well as for branches, regions, associations and enterprises. Delay in the issuance of such guidelines is already causing serious difficulties and as time goes on will lead to major shortcomings both in the formulation of plan targets as well as in conveying these targets and in the establishment of the necessary conditions for their execution.

We consider it effective to plan individual indicators of utilization of secondary raw materials within the framework of the system of indicators established for branches and enterprises that have already been converted or that will be converted to the new conditions of management in the near future and of the new section of the plan "Increasing the Effectiveness of the Utilization and the More Intensive Conservation of Raw Material, Fuel-Energy and Other Material Resources" introduced as of 1987. Thus, having acknowledged that the end result of the recycling of secondary raw materials is the additional production of industrial and construction output with the use of these materials, we should also include among the indicators the sales volume and production of specific types of products measured in physical

terms, including an indication of those products that were produced with the use of secondary raw materials.

In connection with the fact that most types of secondary raw materials are of a regional nature, i. e., must be used in the same region where they are formed, the list of secondary raw materials should be revised according to levels of planning. The State Plan for the Economic and Social Development of the USSR should plan targets only for waste that is formed in a few regions and that can be processed in different regions of the nation (for example, the waste of metallurgical and chemical enterprises, waste products of the mining and ore concentration industry) or that form everywhere but are processed at enterprises concentrated in certain places (glass shards, waste paper, worn-out tires).

The plans of ministries and departments should establish targets for production and consumption waste, the bulk of which is formed and consumed within the branch. The rest of the secondary raw materials should be the subject of territorial planning. Such an approach stems from the decree of the CPSU Central Committee, Presidium of the USSR Supreme Soviet, and USSR Council of Ministers, "On Measures for Further Raising the Role and Increasing the Responsibility of the Soviets of People's Deputies for the Acceleration of Socioeconomic Development in the Light of the Decisions of the 27th CPSU Congress" which empowers councils of ministers of union and autonomous republics and executive committees of local soviets of people's deputies, together with territorial organs of USSR Gossnab and other ministries and departments to establish targets for the collection and utilization of secondary raw materials for the production of consumer goods and other products by associations, enterprises and organizations situated in the corresponding area regardless of their departmental affiliation.

Considering the fact that the recycling of production and consumption waste is a major factor in lowering material, power, financial and labor expenditures, it seems appropriate that targets for conserving material resources in industry and construction should make separate distinction for the share of such conservation that is to be realized from the use of secondary raw materials.

Today it is obvious to everyone that the principal obstacle to the collection and processing of secondary raw materials received from the population and from compact sources [kompaktnyye istochniki] and to the production of the desired products from these raw materials is the lack or extreme inadequacy of a material base for processing waste materials. The attempt of USSR Gossplan to strengthen the development of this base by allocating capital investments in the form of part of the branch volume of capital investments for the construction of secondary raw material processing facilities has yielded almost no practical results. For example, these capital investments, which in 1981-1986 were unduly low from the very beginning in view of the targets for processing secondary raw materials, declined from year to year. Specialists estimate that when the unsatisfactory performance of construction and installation work at secondary raw material facilities is taken into account, even this unduly low volume of capital investment was utilized barely to the extent of one-half under the last five-year plan. In 1987, USSR Gossplan did

not include capital investment targets for secondary raw material facilities and targets for the activation of capacities at these facilities in the "Utilization of Secondary Resources" section of the State Plan for the Economic and Social Development of the USSR.

In order to correct such an abnormal situation, the volume of capital investments and construction-installation work as well as the activation of the corresponding capacities at facilities for processing secondary raw materials must be centrally planned and state capital investments must be allocated from the general limit for the national economy. This will help to create the necessary material-technical base for processing waste in a shorter period of time. Such planning of the development of capacities for processing secondary raw materials can be similar to the establishment of a special limit on capital investments, inter alia, in construction-installation work on the construction, expansion and reconstruction of interbranch facilities for the integrated utilization of mineral deposits and extracted mineral raw materials.

The proposed system of centralized allocations of resources is also provided in the decision of the USSR State Committee for Science and Technology on the volume of financing and labor indicators for scientific research and development work on the problem of utilizing secondary raw materials in the 18 March 1986 decree of USSR Gosplan, USSR Gosstrib and USSR State Committee for Science and Technology "On the State Program for Utilizing the Most Important Types of Secondary Resources in the USSR National Economy in 1986-1990 and the Period Up to the Year 2000" it appears that the practical implementation of these decisions will become the methodological basis of centralized planning of capital investments in the development of capacities for utilizing secondary raw materials in the national economy.

As regards shortcomings in incentives and responsibility for the results of work involving secondary raw materials, there are many unresolved problems, some of which can be resolved even now. Thus, the collection, procurement, and especially the processing of secondary raw materials are as yet but slightly mechanized and require large expenditures of manual labor, which results in the deterioration of labor productivity indicators. The low value of many types of waste makes their use disadvantageous in calculating production cost and the final price of the product and on the other hand individual types of waste that are higher in value than the corresponding interchangeable primary raw material, the prices on which at the present time can be considered as unduly low. This problem can be solved by not taking into account the number of persons engaged in the collection and processing of waste in the assignment of labor productivity growth targets to ministries, departments, associations and enterprises.

In calculating planned production cost of commodity output sold, in the case of waste that is to be used within an association (enterprise) or sold to outside customers, the production cost should be planned and counted for the same groups of expenditures and items as the basic product. The list of so-called nonrecoverable waste, the value of which is included in the production cost of the basic product, must be coordinated with territorial organs of USSR Gosstrib at the place where the association (enterprise) is located.



Similarly, calculations of payments from profit for productive fixed capital must exclude from the value of productive fixed capital the average annual value of productive fixed capital intended for the collection, processing, and delivery of secondary raw materials.

In order to stimulate the more active recycling of waste materials, it appears that the indicator of the level of waste utilization (both within an enterprise or construction site where such waste forms and on the basis of the delivery of such waste to the outside) should be used as one of the indicators for awarding bonuses for basic economic performance in industry, construction, agriculture and transport. What is more, the bonus for fulfilling and surpassing targets for the utilization of production and consumption waste as well as the bonus based on the results of competitions for the more complete identification and utilization of secondary resources should be included among the basic directions of expenditure of the material incentive fund.

In our view, specific associations and enterprises should be made considerably more responsible for damage caused by the improper fulfillment of targets for utilizing secondary raw materials. When it is established that primary raw materials and supplies have been expended in excess of the allocations and when it is found that the corresponding types of secondary raw materials have been underutilized, the enterprise (association) should be made to pay many-fold the cost of the overexpended material resources. If the finished product is unjustifiably written off against production cost and if the waste forming in the production process is subsequently destroyed or scrapped, fines must be levied for the value of the destroyed waste calculated in terms of the value of the corresponding quantity of interchangeable types of primary raw materials. A number of ministries and departments have repeatedly proposed following the example of many foreign countries that tax waste materials. Such a tax should be levied against enterprises failing to fully recycle their waste. The size of the tax should be differentiated according to the level of utilization of waste forming at a specific enterprise. It is also necessary to decide the question of the real, including material, liability of the leadership of ministries and departments for the state of affairs regarding waste. At the present time, responsibility for the nonfulfillment of plans for processing waste materials and contractual obligations for the delivery of secondary resources of ministries and enterprises are purely formal. As a result, many of them systematically fail to fulfill plan targets for waste (for example, during the last five-year plan, the USSR Ministry of Chemical and Petroleum Machine Building did not once meet its target for recycling worn-out tires. Others failing to meet their targets were: the Ministry of Timber, Pulp and Paper, and Wood Processing Industry--for forest waste; the Ministry of Fertilizers--for phosphogypsum; the USSR Ministry of Construction Materials--ash and ash-slag waste from thermal electric power plants, etc.). However, not a single one of them ever requested USSR Gosplan and USSR Gossnab to adjust their plan targets as they repeatedly did in the case of indicators of sales volume and production of basic types of products in the basic product mix.

If we speak of directions of improvement in the management of the collection, procurement, processing and delivery of secondary raw materials, it should be



noted that the nation has not yet developed a well-organized system for managing the utilization of secondary raw materials. USSR Gossnab is empowered to coordinate and oversee this activity in all branches of the national economy and is also authorized to introduce branch systems and norms governing the collection and utilization of waste everywhere. The councils of ministers of union and autonomous republics and executive committees of local soviets of people's deputies have also been given broad powers and obligations in this direction. The various ministries and departments have been assigned responsibility for the utilization of waste forming in branches.

However, as practice shows local soviets of people's deputies, ministries, and departments address these questions sporadically. Specialized subdivisions for the procurement and manufacture (and partially for processing) secondary raw materials in certain product groups are found in seven ministries and departments (USSR Ministry of Ferrous Metallurgy, USSR Ministry of Nonferrous Metallurgy, USSR State Committee for Petroleum Products, USSR Ministry of the Petroleum Refining and Petrochemical Industry, USSR Gossnab, Central Union of Consumers Cooperatives, and the ministries of housing and municipal services of union republics). Nevertheless, even with such a plethora of procurement subdivisions, the utilization of secondary raw materials vis a vis the existing resources is clearly insufficient.

In our opinion, the development of a comprehensive system for managing activity involving secondary raw materials within the framework of the organizational structures already existing in the national economy requires that the organs of management of branches, regions, and enterprises institute a number of measures. In particular, ministries, departments, associations, and enterprises should establish a uniform system of special subdivisions to deal with production and consumption waste. Local soviets of people's deputies should be made responsible for organizing the procurement and processing of traditional secondary raw materials, including those received from the population. At the same time, trade organizations, housing and municipal service organizations, consumer service enterprises, public education and social security organs should also be involved in the procurement of secondary raw materials received from the population.

As is known, the Politburo of the CPSU Central Committee approved the government's proposal on measures to organize cooperatives for the procurement and processing of secondary raw materials under the auspices of territorial organs of USSR Gossnab. It specified that cooperatives should concentrate their activity primarily on the collection and processing of secondary raw materials from the population and on the production of both consumer and producer goods from these materials. These cooperatives should employ pensioners, invalids, as well as working citizens and learners desiring to work in a cooperative in the time they have free from their basic work or studies. At the beginning of 1987, 47 such cooperatives were registered in the nation. Thirty of them had begun producing products from production and consumption waste. The target calls for every union republic (without oblasts) and autonomous republic, kray, and oblast to establish a minimum of ten cooperatives for the procurement and processing of secondary raw materials by the end of the year.

It must be said that the cooperatives are introducing an essentially new economic mechanism that is based on collective self-management, self-supply and interest of members of the collective in the end result of its economic activity--in the amount of income received. In accordance with the Model Charter of the Cooperative, its affairs are managed by a general meeting of the cooperative's members, that approves contracts concluded with customers for the procurement, manufacture, processing, and delivery of secondary raw materials and for the production of products produced by the cooperative using such raw materials; examines and approves plans (based on concluded contracts) for the development of the cooperative; approves estimated incomes and expenditures, output norms, rates of cooperative members' pay, and the cooperative's annual report as well as a number of other documents and indicators defining basic elements in the cooperative's economic and social life.

The cooperative's activity must enable it to use its own income from the sale of secondary raw materials procured and manufactured by it as well as consumer goods and producer goods produced from secondary raw materials to defray all costs associated with the performance with the cooperative's tasks. If the cooperative's economic activity is unprofitable and cannot be carried out on the principle of self-supply and self-financing, the cooperative will be subject to dissolution. At the same time, the state, including enterprises and organizations that have concluded contracts with the cooperative on the organization of procurement, processing and delivery of secondary raw materials and products made from these materials are not liable for losses arising from the cooperative's economic activity. Similarly, cooperatives are not liable for losses of customers concluding contracts with the cooperatives.

After material costs have been compensated from the cooperative's income, after income tax and other mandatory payments have been made, the remaining income is used to remunerate the labor of cooperative members and blue- and white-collar workers that have been hired to work in the collective under a labor agreement and on the basis of established norms for the development of the economic activity of the cooperative. Based on the totals for the year, members of the cooperative are remunerated by the distribution of part of the actual remainder of the income. The amount of this remuneration depends on the personal contribution of each member of the cooperative to the creation of this income. The cooperative's general meeting is empowered to determine the pay of individual members of the collective on a differentiated basis in accordance with the quantity and quality of their labor.

In our opinion, individual elements of the cooperative's economic mechanism for procuring and processing secondary raw materials--after their effectiveness has been verified in practice--can also be used at state enterprises and in organizations where secondary raw materials form and are procured and where products using these raw materials are produced.

Even now there must be more precise structural and functional management of activity involving the use of secondary raw materials in our system. There is a need here for the clear organizational division of two functions that are the responsibility of USSR Gosnab--the function of managing secondary raw materials procurement and processing enterprises and organizations belonging

to our territorial organs; and the function of organizing and coordinating work on the utilization of waste in the national economy in general as well as in individual branches and regions. As regards our own enterprises and organizations that are involved in the procurement and processing of secondary raw materials, in our opinion they should be planned and managed just like enterprises specializing in the delivery of products, enterprises for preparing products for productive consumption, transport enterprises and organizations and other subdivisions in our own economy. An exception may be made here for cardboard-paper mills that process waste paper and for other large and medium-size enterprises that process secondary textile and polymer raw materials and, in the near future, for enterprises that process worn-out tires. Here, it seems feasible to organize a specialized industrial association that incorporates science-production associations (on the basis of existing institutes and their pilot plants) that would elaborate promising technologies and the necessary equipment for producing new types of industrial and construction products using waste materials.

With regard to the function of organizing work with secondary raw materials in the national economy as a whole, it is advisable to strengthen the role of administrations for supply and for the rational utilization of material resources for their parent ministries and also corresponding subdivisions of central apparatuses of the gosznabs of union republics and main territorial administrations of committees--for republic ministries and departments, for associations and enterprises in industry and construction as well as in other branches of regional activity. At the local level, all this activity should be carried out in close interaction with executive committees of local soviets of people's deputies and should incorporate: the organization and oversight of regional work on the most complete involvement of secondary raw materials in economic circulation, on the development of the system of procurement, manufacture, and processing of production and consumption waste; the creation and introduction of progressive processes and equipment for processing secondary raw materials and the organization of research and design work in this area; the formation and approval of targets for the additional production of products using production and consumption waste and by-products to be collected, processed, and delivered to customers at enterprises belonging to ministry and department enterprises situated on the territory of a corresponding soviet of people's deputies; and the organization of the elaboration of directives of effective utilization of secondary raw materials and production using these materials in the future.

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## SARATOV OBKOM CC PLENUM CRITICIZES APK PERFORMANCE

Moscow SELSKAYA ZHIZN in Russian 31 Mar 87 p 2

[Article by M. Fomin, special SELSKAYA ZHIZN correspondent: "New Approaches are Needed -- From the Plenum of the Saratov Obkom"]

[Text] The speech made one both happy and concerned. G. V. Katushev, first secretary of the Engels Gorkom spoke sharply, not cutting corners, and, the main thing, touching upon what is always the most urgent question: work with cadre. What must be done to avoid gaps in selecting and assigning cadre, what are the most effective forms for working with people which must be used by party committees. One of the ways is the elective system.

The speaker noted, "Several managers at various levels have been elected in some cities and rayons in the oblast. One can now say that this practice has proven itself as one of the ways of restructuring and for citizens to gain rights. This important and responsible matter should not be left to spontaneity.

To spontaneity? Are doubts already being expressed about a new road, which has still not been surveyed and is only now being tested? Just what is troubling the first secretary? It turns out that he does not agree that in competition to fill vacancies every specialist can suggest his candidate for any position. He also asked: Is this approach right. Wouldn't it be better for us ourselves to propose a candidate from the available reserve selection?

Really! It turns out that democracy is for the democrats, but the old path is a more reliable path. Not only more reliable, but fewer troubles. Everything is new, the signs have been changed, but the essence remains the same.

I thought that the next speaker would not agree with this position, would polemicize against it, suggesting his own alternative. However, this did not happen. After all, the Saratov Obkom Plenum, dedicated to the results of the January (1987) CPSU Central Committee Plenum, made its goal the search for and approval of ways to deepen restructuring and improve work with cadre in accordance with the latter plenum's decisions. Even before the Saratov Plenum opened quite a bit had been done in this regard. Many obkom members and a review committee visited the city and rayons, a broader circle of party aktiv than previously was enlisted into work on documents. At the obkom buro meeting



held before the plenum it was solidly decided to reject the traditional compilation of a list of speakers. Speakers would not step to the podium when prompted, but on their own free will. The discussion turned out to be businesslike, specific and with a sober evaluation of the path taken and the socio-economic developments attained.

And quite a lot has been attained. In the first year of the 12th Five-Year Plan national economic growth rates increased and the gross output in the countryside increased by 12 percent. Livestock productivity grew: average milk yield per cow increased by 271 kilograms, food supplies to the local population became more stable, and targets for the introduction of housing, schools, children's institutions, health care facilities and trade and public food service units were overfulfilled. Results were also not bad for other areas of the agro-industrial complex.

Not flattering themselves with these achievements, plenum participants spoke for more decisive restructuring measures and for overcoming those negative phenomena delaying forward movement. The report by A. A. Khomyakov, first secretary of the obkom and by other participants mainly discussed unutilized reserves for attaining better final results. It was stressed that agricultural production in the oblast has still not acquired the needed stability and that intensive factors have only been weakly effective, both in crop and in animal production. Because of all this, in the past five-year plan the oblast turned out to be 8.3 million tons short on deliveries of grain to the state and for potatoes and other agricultural products the shortfall reached 106,000 tons. Every year there are more kolkhozes and sovkhozes losing money.

Of course, these "birth marks" in the development of agriculture did not appear on their own. A. I. Nechayev, director of the Sovkhoz imeni Radishchev, was very correct in saying that the reasons for the misfortunes are in people. The things which were allowed during their service are on their conscience. It was indicated at the plenum that during the time it was headed by K. M. Ponomarev, the oblast agroprom council showed sluggishness lack of initiative in making key decisions. The same can be said about many RAPO. Several gorkoms, raykoms, primary party organizations and farm managers tolerated situations and did not look for ways to improve them.

Here is an example. Compared to the average level during the 11th Five-Year Plan, last year agricultural production in Krasnopartizanskiy Rayon only increased by 1 percent, the plan for meat sales to the state was only a little more than half fulfilled. Ten farms out of 14 here were working unprofitably. The party raykom is constantly criticized for old methods of management, replacing economic management organs, and an unself-critical approach towards results, but the situation has not been corrected, on the contrary, each year it gets worse. At the plenum also the question was correctly posed: Can party organization leadership continue to be entrusted to V. P. Presnyakov, the first secretary? The plenum demanded that the obkom buro not restrict itself to relations between party and economic managers, who are not keeping up with the times, or to their promises and exhortations to work in a new way, but to take the strictest party measures.

In his speech, N. G. Zhevak, the first secretary of the Markovskiy Gorkom, noted that the formation of contract links is a workable step towards intensification. All production units in the rayon have been converted to collective contract.

The speaker stressed that this conversion convinces us that the cadre problem at farms in the rayon, which we previously discussed in every way, is nonexistent. Moreover, today it is necessary to think about developing additional sectors to occupy the people released. Collective contract has made it possible to more effectively use equipment and to introduce two shift work on fields and animal farms. Some equipment, such as irrigation machinery, is working around the clock.

Plenum participants came to the unanimous conclusion that any shortcomings can be eliminated by a fight against stagnation, conservatism and obsolete thinking. They said that restructuring is a creative search and effective actions. Who should be the leader in restructuring? Naturally, party committees. The plenum pointed out gorkoms and raykoms which were businesslike and specific in their activities. At the same time it was noted that for the oblast in general, the party is only slowly influencing changes in the style and methods of economic management. Often vital organizational work is replaced by paper flows. This is also a shortcoming of the oblast party committee. N. G. Zhevak, describing his activities during restructuring noted without irony that for associates in the apparatus, "restructuring" is reduced to making inquiries by telephone rather than requiring a written report. They rarely make visits to local areas, and if they do they restrict their visits to reviews.

Some speakers turned their attention to the work style of control organs. They often do not eliminate shortcomings, but create them, making collectives nervous and distracting managers and specialists from their specific duties. Thus, during February - March alone 34 various commissions visited farms and enterprises in Balashovskiy Rayon to make reviews. From each one they collected information and compiled reports. How much useful and necessary work could have been done during the time taken by these commissions! Does this really help restructuring? Who is responsible for such neglect?

Harsh criticism was directed towards managers who create the appearance of restructuring, but in essence act in the old manner, continuing to move along well worn paths. Here is a case. Last year the buro at the Khvalynskiy Gorkom noted unsatisfactory preparations for planting at the Borba za Mir Kolkhoz. A week later it approved an initiative by this lagging farm to complete spring field work rapidly and well. When results from rayon competition were reviewed it turned out that neither the kolkhoz as a whole nor any of its planting units were among the victors. This indicates that the party committee does not know the actual situation, is happy with questionnaires and reports which are not always objective.

Restructuring above all applies to cadre's thinking and actions. Therefore plenum participants gave special attention to their selection, assignment and education. It was noted that although many sections of party, soviet and economic management work are staffed by competent people, there has still not

been a radical restructuring of cadre policy. Especially troubling is the rapid turnover of specialists at all levels. At the plenum it was noted with concern that in the past two years almost half the chairmen of city or rayon soviets of people's deputies and a third of the deputy chairmen have been replaced. The picture is almost the same for kolkhoz and sovkhoz managers. This reshuffling indicates that in the oblast big errors are made in promoting cadre and no serious work is done educate them.

To avoid this frequent turnover, it was pointed out at the plenum that it was necessary to have a reliable reserve of people for advancement. There is no such reserve in some rayons. Because of this one third of the secretaries at rayon or city party committees was recommended from other rayon or city organizations. Who can guarantee that after a time some of these promoted officials will not have to answer communists for their bad work? Take, for example, V. I. Tikhonov, first secretary of the Krasnokutskiy Raykom. For administrative conceit and trying to solve problems within a narrow circle, he got, as they say, top marks at the raykom plenum. The open approach to discussing the first secretary's work style, until recently considered the competence of superior authorities, has brought forth a quite understandable resonance in the rayon and oblast. However, wouldn't it be better if there were simply no occasion for such discussions?

Many errors and oversights in selecting and assigning cadre were made public at the plenum podium. These are a consequence of a superficial study of occupational and political qualities, ignoring the opinion of collectives where they worked previously and the lack of widespread openness in their promotion.

The decisions made by the plenum made a principled evaluation of negative phenomena, noted specific measures to deepen restructuring and its foundations -- improvements in work with cadre in light of decisions made at the January CPSU Central Committee Plenum.

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## READERS COMMENT ON AKP RESTRUCTURING PROBLEMS

Moscow PRAVDA in Russian 3 May 87 p 2

[Article by Aleksandr Platoshkin : "Person with a Portfolio -- Three Hundred Letters on the Agroprom"; first paragraph is source introduction]

[Text] At the January (1987) CPSU Central Committee Plenum M. S. Gorbachev said that democratization was the tool which would make it possible to engage a decisive force -- the people -- in restructuring. The train of acceleration, including the agroprom, is only beginning to build up speed. Openness, criticism and self-criticism and control by the masses will help our movement forward. Cadre concerned about working actively, with high professional skill and innovatively, are called upon to head this. This is mentioned in readers' letters discussing problems and ways of restructuring the APK.

**"OPERATORS" AND "STAFFERS"**

In the APK today there are about 50,000 farm chairmen and directors, a large army of specialists and managers at enterprises, committees and associations. They are improving the situation on fields and farms, in RAPO, and republic and all-union gosagroproms. Readers note that restructuring requires many factors, both social and economic be taken into account. The management apparatus also has a big role here. This is the role of the "person with the portfolio" says M. Makarov from Moscow

People from the land are called farm managers, representatives of agroprom power. Each is entrusted with a specific area of activity, a "portfolio". This means what is allowed, correct and specified.

How do readers see their increasing role? Above all in planning, improving the economic management mechanism, increasing enterprise independence and cadre initiative. More than six months ago B. Kulpin from the Moldavian SSR wrote: the farm's product sales volume had been changed twice. The areas to be planted, yields and gross harvest were set from above. Even today this is being repeated, as A. Mikhaylov, a machinery operator from Pskov, P. Kosenko (Sumskaya Oblast) and other writers report.



Attempts to link crop area, schedules, herds and a multitude of other indicators, including intermediate ones, are the sign of an expense mechanism [mekhanisma zatratnogo]. It needs no counter mechanism, note N. Panin (Saratov), B. Matskevich (Minsk), M. Kuzub (Poltava Oblast) and A. Morozov (Cheboksary). People with a portfolio often are not aware that paper which contradicts reality will be tossed aside by practical work. This is not observed and is incorrectly interpreted. There are still many "operators" at associations and committees. They can quickly gather data, prepare inquiries and decrees. The development strategy? It should be their own "staffers" and the agroprom.

It turns out that it is easier to talk about the new way than to work in it. A few days ago M. Grafskiy, a Hero of Socialist labor and former sovkhos director, called us from Vladimir. Mikhail Grigorevich is retired on pension, however he is still ardently interested in agriculture. He reported that in the oblast nitrogen fertilizers are applied to hard ice and unmelted snow. This means that they loose some of their powers. Many rural managers understand this. However, there are instructions from the oblast... Control over farms, but not for every minute, is required by committees and associations -- analysis, forecasting, precise recommendations. Farmers especially need this now. Spring messed up and confused their calculations. It is necessary to decisively and quickly outline and implement measures so that by autumn there will be good harvests and ample feed supplies.

RAPO managers are still too slow in giving up a command style. Readers remind us that from the very beginning rural leaders were given majorities in RAPO councils. The RAPO chairman should be an executive director.

Strict regulation does not "connect" with self-financing and self-support [samookupayemost]. A simple, understandable cost accounting [khozraschet] scheme deprives a person with a portfolio of his accustomed style, paperflow. This is why they stumble, reckons V. Sukhov (Kemerovo Oblast). It is one thing to write things down fashionable, but another to organize brigades and links, including family ones, and give them land and equipment, and, of course, independence, note V. Gevorkyan (Tbilisi) and I. Smirnov (Gorkiy). The role of councils at production units, meetings and collectives in management, economics and especially in pay setting must be increased, think V. Marchenko (Kharkov Oblast), A. Karpov (Kaliningrad Oblast).

P. Bodrov (Saratov Oblast) writes that now, when kolkhozes, brigades and links are on cost accounting, it is also necessary that there be changes for machinery builders. Really -- buy plows which are leaking hydraulic oil? Economics forces a principled approach: produce what is bought, and not the other way around, notes V. Kiselev (Troitsk, Chelyabinsk Oblast) and others.

Managers and specialists at kolkhozes and sovkhoses are paid by final results. Their partners' pay is not linked to work results on fields or farms. If there is no unity in incentives, there can hardly be unity in attaining common goals, readers assert.

## A LEADER IS REQUIRED

Restructuring has undoubtedly improved the economic situation in the countryside. Readers note that the "people with portfolios" deserve considerable merit for last year's increases in production growth rates and gross output. Nevertheless, things are only moving forward slowly. More than 6,000 farms lost money. Specific people are responsible for each error.

Is it necessary to turn to them with general calls and exhortations? write V. Loskutov (Murmansk), L. Gaponov (Sverdlovsk). There are plans, targets, incentives and implementers. It is time to put the question differently: why wasn't something done and who is guilty. Managers should more boldly assume responsibility, writes V. Bonkin (Tyumen Oblast). The main thing is to see the long term perspective. It is clear, other qualities are to be applied, comment I. Ulinets (Transcarpathian Oblast) and L. Lemyakin (Volgograd oblast). No leader can move a farm from a dead stop without solving social questions.

There is a long list of demands made upon a modern leader, a "manager" [upravlenets] The knowledge levels of a "person with a portfolio" often leave something to be desired. V. Nikolayev (Leningrad) and I. Kostrov (Kuybyshev Oblast) ask, cannot kolkhoz or RAPO chairmen or sovkhos directors be taught? S. Korzyukov (Odessa Oblast) proposes that at VUZ's there be a deeper study of economics and technology. It has apparently become time to create, at VASKhNIL [All Union Academy of Agricultural Sciences imeni V. I. Lenin] an institute for theoretical research, if you will, an agrarian institute for restructuring, writes S. Lykho (Poltava Oblast). There is a need to analyze and draw conclusions from the rich factual material to make certain the path for the APK's further development. N. Petrenko (Kiev) suggests a public call, above all for communists and Komsomol members, to work in the countryside.

L. Govorov, S. Baykov (Karaganda), N. Smetanin (Kazan) and M. Krupa (Kiev) note the need to more broadly propagandize the experiences of good managers and specialists, such as Vasilii Gorin, Dmitriy Motornyy, Vasilii Starodubtsev and Nikolay Tereshchenko. They have an excellent knowledge of their people and find time to meet with young people. One can rely on party organizations. Kolkhoz meetings serve as schools for management and democracy.

A rural leader's bread is not sweet. Perhaps this is why there is a shortage of such people. We have a selection, readers assert, if we find the talent. There should not be a formal approach to selection and assignment. RAPO chairman is a responsible position. Knowledge and experience are needed in order to give others advice. Authority too. RAPO chairmen sometimes confirm chairmen of middle level kolkhozes.

In giving recommendations to the party, a communist answers for them. What if you suggest someone for director or chairman and they are disappointing? We have many such examples, write A. Pozolotin (Kirov Oblast), V. Voloshin (Voronezh Oblast) and G. Smirnov (Orenburg). In some rayons cadre are changed two-three times during a five-year plan. Collectives and economies suffer. When inquiries are made, it is not even remembered who recommended them. This also creates volunteerism in promotions. At times priority is given to complacency and obedience. Above all, this applies to raykom first

secretaries, writes M. Ivanyutin (Bryansk Oblast). In order to make fewer errors in promotions there should be more widespread elections of cadre. Rayon and oblast managers should study people and more frequently visit local areas. Letter writers are concerned about the huge management apparatus. At some institutions there is not enough room for desks, write M. Ivanenko (Vinnitsa Oblast) and N. Karlov (Omsk). Specialists must be helped in their work, for which the state used the people's money to train them, thinks G. Ignatyev (Khabarovsk).

However, the question about staffs and paper flow is not a simple one. A study of letters to the editor shows that acquaintance with it at associations and committees leads to the following. About one third of the official correspondence at APKs is about material-technical supply, 13-15 and more percent is about planning and socio-economic development. Then follow mechanization and cadre questions. It will be difficult to reduce the amount of paperwork without solving these problems and giving space to economic methods.

#### ABOUT ARROWS "FROM AROUND A CORNER"

Among the letters about restructuring and cadre at agroproms, there are many which have not been signed. Anonymous writers from Cherkassy reveal secrets of inaccuracies in reports. This is also the subject of a letter from workers at the Chervona Ukraina Special Sovkhoz near Kharkov. From Kursk Oblast there are reports about how a rayon agroprom has not been turned around.

The writers could have directed these questions to local authorities. However, the Kursk writers state "... I and my husband are communists (?!). If they learned about the letter, it might get unpleasant for us." The same opinion is expressed by a "group of communists" from the Stepanovskiy Sovkhoz in Penza Oblast.

It might be advantageous to anonymous writers to include any name. They will not hesitate to sign a letter with the name of an acquaintance or coworker, writes A. Rudenko (Poltava). Much has been said in the press about anonymous letters. This theme was also raised by M. Vagin, a kolkhoz chairman from Gorkiy Oblast (PRAVDA 26 April). Most of those who responded to this letter advocated not looking at letters without signatures.

It is hardly worth it to anonymous people to attract to much attention. However, they cannot avoid it altogether, think some letter writers. They are also on guard against hastiness in revealing the "anatomy" of anonymous writers. The democraticization of economics and management is underway in agroproms. Increasing demands are being made upon cadre. This is not painless. The reaction to restructuring is a growing flow of letters.

Ye. Ivchenko (Kursk Oblast) reckons that contrary to what M. Vagin advises, it is not good to sign letters. If the writer's opinion does not coincide with that of the managers', then tomorrow he will begin his working day with a visit to the office of the lawyer, personnel manager, or trade union chairman, so that they can find the key to the objectionable individual and get rid of him, writes N. Subbotin (Leningrad). Some honest letter writers have suffered

for their signatures, L. Podzikun (Volgograd Oblast) continues this line of thought. Some are released, others removed from the people's control group so that they will know less, while others are removed from trade union committees. To loose one's job in the countryside means to sit at home. This is not the city, where one can find work at another enterprise.

It is indisputable, that "bathwater" from anonymous writers is needed, agrees P. Kirillov (Tula). However, one can also throw out the baby with the bathwater. The examination of such a writer is not the same as punishment. The result can also be the strengthening of an honest person's reputation, the suppression of gossip and conjecture. Criticism from above and criticism from below, the author continues, should be in a definite equilibrium. However, only authorities have the possibility of "regulating" criticism from below and persecuting it.

Another question arises. Why are "arrows from around a corner" most often aimed at managers. After all, in the opinion of the same readers, this "person with a portfolio" is a former kolkhoz farmer or worker, teacher or agronomist who has won the right to become a leader by work and knowledge and and shown the capability of understanding others.

This is true, agrees L. Derevyanko (Tashkent), however, a leader must be with the people, not over them. Then his authority will be retained and the atmosphere in the collective will remain clean. He will be able, as is said, to quickly "remove" complaints, faults, and misunderstandings. This is an indispensable condition for the openness and the development of criticism and self-criticism called for by the party. Anonymous complaints are sort of a boomerang, they most often hit those who forget about collectiveness in work and the strict observation of social justice and democracy.

In a short survey it is difficult to name everyone who has written and to give a detailed presentation of their judgements and comments. We thank the readers for their responses. They will be the subject of forthcoming articles.

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## LITHUANIAN AGROPROM CONFERENCE ON RESTRUCTURING TASKS

Vilnius SOVETSKAYA LITVA in Russian 7 May 87 p 1

[ELTA item: "Important Tasks in Restructuring the Gosagroprom"]

[Text] On 6 May there was a meeting of the party organization at the Lithuanian SSR State Agroindustrial Committee to discuss acceleration in restructuring and improving work with cadre in light of the decisions made at the January (1987) CPSU Central Committee Plenu.

In their reports, Yu. Bernatavichus, first deputy chairman of the LiSSR Council of Ministers and Gosagroprom chairman, and other communists who spoke gave a businesslike, active examination of the committee's work, shortcomings and problems and talked about tasks which must be quickly handled.

V. Sakalauskas, chairman of the Lithuanian SSR Council of Ministers, gave a speech at the meeting. He noted that Gosagroprom and its apparatus are exerting efforts to improve work and that in some places there are improvements. However, there are many shortcomings and oversights.

Comrade V. Sakalauskas stressed that one of the most important tasks is further intensified crop production, as the situation there is still unsatisfactory. In recent years there have been practically no improvements in the yields of many crops. It is especially important to achieve a turnaround in grain production -- for three five-year plans in a row the grain production plan has not been fulfilled. This is the result of complacency and stereotyped thinking.

It is time to analyze and critically evaluate the feed production situation. During the 11th Five-Year Plan, the consumption of feeds produced at farms hardly increased over the figure for the 9th Five-Year Plan. Moreover, the consumption of concentrates obtained from the state increased considerably. Improvements in feed quality are still an urgent question. It is necessary to effectively organize the raising and procurement of potatoes, flax, sugar beets and produce.

Dwelling on improvements in animal production, Comrade V. Sakalauskas noted that there was a need for serious concern about intensifying the production of milk, increasing the weight gain of cattle and hogs on feed and improving

animal product quality. It is necessary to more exactly solve questions in the mechanization of production processes, develop repair and technical service facilities, save fuel and power resources and see that farms are supplied with equipment and spare parts on time.

There are many oversights in major construction. The plan for building individual homes in the countryside was completely broken. There are still cases of unplanned projects being built. There is no concern about improving the structure of design organizations.

Not enough attention is given to strengthening the processing industry's material-technical base and modernizing it. There is still too much manual labor in production work. At the same time it is necessary to increase requirements about product quality at industrial enterprises in the sector and to update and expand assortment.

Serious shortcomings have also been noticed in the work of the main administration for scientific support to the agro-industrial complex. The activities of scientific-research institutions are poorly coordinated and their efficiency not improved enough. The main administration for planning and economic development has not shown sufficient thoroughness in analyzing economic and financial activities at farms, enterprises and organizations, is not having the needed influence upon strengthening their economies and has not avoided formalism in introducing cost accounting and collective contract.

Comrade V. Sakalauskas also directed attention towards the need to promote to responsible positions the more capable young people, women and people of various nationalities. There should be more concern about training people for the mass professions in the countryside, retaining them and reducing the management apparatus.

The agro-industrial committee should be on guard against passivity and conservatism among some workers. It is important to precisely delineate the work spheres of management workers and to assure collegiality. It should also be noted that committee managers do not always self-critically evaluate the situation in the system, nor do they sufficiently orient the collective towards better solutions to social problems. This is also a shortcoming in the party committee's work. It is therefore necessary to increase the demands made upon communists, to monitor administration activities, achieve openness in creating cadre reserves, more actively develop criticism and self-criticism and see that units' own decisions are implemented.

V. Simniskis, head of the Lithuanian Communist Party Central Committee's Department of Agriculture and the Food Industry, participated in the conference's work.

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NEW APK, LIVESTOCK JOURNALS ANNOUNCED

Moscow SELSKAYA ZHIZN in Russian 2 Jun 87 p 4

[Unattributed report: "New Journals"]

[Text] In July 1987 the All-union Agropromizdat Association will begin publishing the new journals DOSTIZHENIYA NAUKI I TEKHNIKI APK [Achievements of Science and Technology in the Agroindustrial Complex] and ZHIVOTNOVOD [Livestock Breeder].

DOSTIZHENIYA NAUKI I TEKHNIKI APK

This monthly publication for kolkhoz chairmen, sovkhos directors and managers of APK enterprises will review problems related to improvement of management and strengthening kolkhoz and sovkhos economy through cost accounting and collective contract implementation. It will bring to light managerial work experience. New achievements of science and technology will be discussed.

The journal will have sections on management and labor law, will give scientific and technical counsel from USSR Gosagroprom, and will provide information from abroad, consultations, and reference materials.

ZHIVOTNOVOD

This journal will respond to many problems confronting workers on livestock farms and complexes such as: how to organize brigades and family contract units; what prevents the implementation of progressive technology; why "two-shift" work is slow to develop on farms; and labor and industrial sanitation conditions...

In the pages of the journal, the experienced worker and the young person newly arrived at the farm from school will share their thoughts on life and work.

A legal expert will accept "personal questions", and specialists will give useful counsel on holding livestock in personal plots, and production procurement for profit.

We await your advice and wishes, dear readers.

A subscription to the journals will be accepted for any next issue in all communication channels, by public press distributors in the work place, school, and residence.

The index number of the journal DOSTIZHENIYA NAUKI I TEKHNIKA APK is 70257. The cost of a year's subscription is 7 rubles 20 kopeks. The price of one issue is 60 kopeks

ZHIVOTNOVOD has the index number 70300. The cost of a year's subscription is 4 rubles 80 kopeks. The single issue price is 40 kopeks.

The address of the editorial office is:  
107807, GSP, Moscow V-53,  
Ulitsa Sadovaya-Slaskaya, 18  
VO Agropromizdat.

A subscription may be opened by a letter to Soyuzpechat TsPA (Central Subscription Agency) No 15-27/32.

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WEATHER AND FIELD CONDITIONS IN THE SOUTHERN UKRAINE

Field Work Begins

Moscow SELSKAYA ZHIZN in Russian 28 Feb 87

[Article by A. Soldatskiy: "Without Losing Time"]

[Text] Simferopol, 27 Feb--No one in the Crimea was yet hoping that February would open its "windows" this year. It has been a long winter. But the machine operators have been actively preparing for sowing. All of the equipment is already in readiness.

And at Zarya Kolkhoz in Belogroskiy Rayon, they took the sowing machinery out into the fields as soon as the soil was ready on high ground. Here they are sowing oats, barley and fodder grasses. As a rule, seed planted in February gives a better yield than March sowings.

The farms of Semferopolskiy, Sakskiy and Bakhchisarayskiy rayons have begun work in the fields.

Heavy Snowfall Threatens Trees

Moscow SELSKAYA ZHIZN in Russian 13 Mar 87 p 4

[Article by V. Chernobrov: "They Saved the Trees"]

[Text] Yalta--Hundreds of trees, including very rare varieties registered in the Red Book of the International Union for Nature Conservation, recently found themselves under the weight of white caps in the Upper, Lower and Maritime parks of Nikitskiy Botanical Gardens, 175 years old this year. The ample March snowfall of up to a meter and a half in places, unprecedented even for mid-winter, could easily break the branches of many heat-loving plants. People came to the aid of the trees.

On working days as well as on their days off, scientific assistants and workers used poles to knock the snow off the trees. And whereas the yew, Crimean pine, cherry laurel and palms are freed of snow relatively easily, bamboo, olive trees, magnolias, cypresses and most broadleaves require considerable effort and skill. Some plants were damaged. Fire engines were

brought in to save them. Snow-removing equipment is working around the clock. Many relict trees of Nikitskiy Botanical Gardens were saved.

#### Fertilizing of Winter Crops

Moscow SELSKAYA ZHIZN in Russian 27 Mar 87 p 1

[Article by A. Soldatskiy: "They Are Feeding the Winter Crops"]

[Text] Odessa, 26 Mar--The machine operators are continuing the supplementary feeding of winter crops on the farms of Kiliyskiy, Tatarbunarskiy, Saratskiy and other rayons.

On the farms of Belgorod-Dnestrovskiy Rayon, the farmers decided to feed every hectare of winter crops. They are using ground implements as long as the ground is frozen but they plan to resort to the assistance of aviators as soon as the soil thaws out.

#### Spring Crops Planted

Moscow SELSKAYA ZHIZN in Russian 14 Apr 87 p 1

[Text] Kiev--The busy time of the sowing campaign has come to the fields of the southern Ukraine. The seed of barley, oats and grasses has gone into the soil of the first thousands of hectares. The areas in the republic in which spring crops will be cultivated under intensive technology have now been expanded. Subdivisions to which plantings have been assigned are working under the collective-contract method. The republic's early grain machine operators have to occupy almost 5 million hectares of plowed fields.

#### Wet Fields in Crimea

Moscow SELSKAYA ZHIZN in Russian 16 Apr 87 p 1

[Article by A. Soldatskiy]

[Excerpts] Krymskaya Oblast--The spring field work in the Ukraine usually begins in the Crimea. Things are all mixed up this year. In Odessa and Kherson oblasts, thousands of tractor units worked day and night to cover the moisture, sowed early spring crops and prepared the soil. On the Crimean Peninsula itself, machine operators brought out the first machine units with harrows only in the piedmont rayons and there only on the southern slopes.

In most cases, they generally finish the sowing of spring crops here in the first half of March and then all attention is concentrated on the preparation of the soil for late crops. In many years, I observed that they began the mowing of winter crops grown for livestock feed in mid-April. Now, however, the plants have just begun to revive after the winter period.

"Our farmers do not remember such a late arrival of spring," says G. Martynets, first deputy of Krymskaya Oblast Ispolkom. "Not only 5 April did the first machine units appear in the fields of the steppe zone and they

worked selectively. But despite the whims of the weather, the tasks remain the same--to complete the sowing of all agricultural crops by the first of May. And this means that in 2 weeks the amount of work must be done that in normal years is intended to last a month."

But it was not just the late spring that delayed the Krimean machine operators in going out in the fields. This year's snow cover was unprecedented. Even the oldtimers do not remember such an abundance of snow. And it fell in March, when no one expected it, and lay on the thawed ground. And the soil turned out to be excessively wet. Today it is necessary to make some corrections in the schedule for the field work. But there is always some good with the bad: despite the forecasts, the precipitation did not produce the expected flood. The snow melt was slow and the water did not run off into the sea.

So there may yet be a good harvest if, of course, the gift of nature is handled effectively. And they did a good job of organizing the field work.

#### Spring Work Under Way

Moscow SELSKAYA ZHIZN in Russian 22 Apr 87 p 1

[Article by A. Soldatskiy: "Machinery in the Fields"]

[Text] Kherson, 21 Apr--Spring came almost a month late to the Tavriysk area. But thousands of machines were put to work as soon as the sun warmed things up, the warm wind began to blow and the soil was ready. In just a few hours in Golopristanskiy, Skadovskiy, Genicheskiy and other rayons, the machine operators covered the moisture in the soil and sowed early spring grains and they are now sowing fodder crops.

#### Cyclone in the Ukraine

Moscow SELSKAYA ZHIZN in Russian 28 Apr 87 p 1

[Article by S. Luzgan: "Cyclone Over the Ukraine"]

[Text] Kiev--Last night a cyclone accompanied by hurricane-force winds, rain and snow held sway over the Ukraine.

The cyclone passed over rayons in Odessa, Nikolayev, Kirovograd, Khmel'nik, Vinnitsa, Zhitomir, Kiev, Cherkassy and Chernigov oblasts. It brought intense rains to the south and copious snowfalls to the central rayons. In Kiev Oblast, for example, the snow accumulated from 23 to 51 centimeters deep and the force of the wind reached 30 meters per second. The strongest wind gust, 34 meters per second, was recorded in Umanskiy Rayon of Cherkassy Oblast.

The hurricane winds uprooted trees and tore off the roofs of buildings. More than 200 kolkhozes and sovkhozes, 350 villages and 400 livestock farms suffered power losses. Field work was temporarily interrupted in the zone of the cyclone.

As they reported in the republic government commission for combating natural disasters, the effects of the cyclone are being eliminated.

#### Innovations in Field Work

Moscow SELSKAYA ZHIZN in Russian 30 Apr 87 p 1

[Article by S. Luzgan: "Applying the New and Advanced"]

[Text] Kiev, 29 Apr--They reported in the Ukrainian Gosagroprom that the southern oblasts--Odessa and Krymskaya--as well as southwestern Chernigov and northwestern Volynskaya oblasts were the first in the republic to complete the sowing of early grain and legume crops.

Much that is new has appeared this year in the spring fields of the Ukraine. This includes the organization of the flow-cyclical method and the utilization of equipment in two shifts, often at night. The application of wide-coverage and combined machine units condenses time and raises the quality of technological operations. Cost-accounting contract collectives are especially well organized in carrying out field work.

#### Heavy Snow in Crimea

Moscow TRUD in Russian 4 Mar 87 p 4

[Article by A. Zadunov: "Yalta Under Snow"]

[Text] It seemed to the citizens of Yalta back in the first days of February that they had said good-bye to winter for good. And suddenly, the night of 2 March, a powerful snowstorm descended upon Yalta.

"In our zone," said D. Furs, head of the weather station at Nikitskiy Botanical Gardens, "such a snowfall has not once been recorded in 56 years of regular observations."

The cyclone, coming from the Balkans, covered the entire Crimean Peninsula like an umbrella. By midday on 3 March, the depth of the snow cover reached 30 centimeters in Yalta and 60 centimeters on the mountain plateau. Avalanches are expected to descend from the entire southern slope of the mountains.

According to weather forecasters, the snowfall in the Crimea may continue for 2 more days.

#### Corn Sowing Under Way

Moscow TRUD in Russian 8 May 87 p 1

[Text] Donetsk--Having completed the work in the barley fields in a very short time, the oblast's machine operators began the large-scale sowing of corn for grain.



## PRODUCTION EFFICIENCY, QUALITY OF FEED REVIEWED

Moscow EKONOMICHESKAYA GAZETA in Russian No 20, May 87 pp 10-11

[Article by F. Bogomolov and N. Dudorov: "Feed Expenditures and the Return From Them"]

[Text] Initially, allow us to discuss briefly a subject other than feed. Each of us, according to statistics, annually consumes more than 60 kilograms of meat and meat products, in excess of 320 kilograms of milk and roughly 260 eggs. Certainly, these are averages. Some consume more and some consume less. Are these figures large or small? Judging from the availability of livestock products in the stores, they are small.

There is no need for proving that the task of supplying the population with food products is dependent upon the level of development of all branches of the agroindustrial complex. But special importance is being attached at the present time to intensifying the production of meat, milk and other livestock products. For the demand for these products is increasing with each passing year. In addition to other measures, in order to satisfy this demand more efficient use must be made of the reserves available for raising the efficiency of farm operations. Opportunities are available for accomplishing this. The branch possesses skilled cadres of specialists and a strong economic potential has been created. Unfortunately, it is not always being used in a rational manner.

Of the many conditions affecting an increase in the production of meat, milk and other farm products, we can single out three of the more important ones: ensuring the availability for and use by the livestock of feed, the organization of breeding work on the farms and the introduction of progressive forms for labor organization, particularly the collective and other contractual forms. Without negating the importance of the latter two conditions, let us pause to discuss the problems concerned with the production of feed and its use. For growth in the production of livestock products is dependent to a considerable degree upon this factor.

## Opportunities and Their Use

The importance attached to the efficient use of feed on farms derives from the fact that feed constitutes a strong proportion of the output production costs.

It is sufficient to state that in the expenditure structure for a quintal of weight increase in cattle, feed occupies 58 percent, for a weight increase in swine and sheep -- more than 60 and milk -- more than 46 percent. Thus, not only the volume of goods produced but also the profitability of animal husbandry operations are dependent both upon the amount of feed consumed and its quality.

The country's kolkhozes, sovkhoses and inter-farm enterprises have great opportunities at their disposal for satisfying completely the livestock requirements for rich feed. Forage crops alone are being grown on almost 70 million hectares. We have more than 290 million hectares of pasture and 34 million hectares of natural haying land. Over the past two years, roughly 185 million tons of hay, 60 million tons of root crops and more than 330 million tons of silage corn were procured throughout the country. These appear to be impressive figures. However, let us examine the manner in which this feed is being made available for the livestock.

If we examine the last three years, then it is apparent that at the beginning of the wintering campaign the kolkhozes, sovkhoses and inter-farm enterprises had only 11-12 quintals of feed units per standard head of livestock. And on farms in Georgia, Uzbekistan, Tajikistan, Armenia and Turkmenia, the availability of feed for the animals was even less.

Under such circumstances, special importance is attached to organizing efficient use of the available feed resources. It bears mentioning that there are many derelictions in this work that are adversely affecting the livestock productivity and the production costs.

During the last five-year plan, the country's farms expended an average of one and a half quintals of feed units for a quintal of milk and this figure exceeded the zootechnical norm. And the kolkhozes and sovkhoses of Uzbekistan, Turkmenia and Azerbaijan are expending almost twice this amount.

Under these conditions, 2,404 kilograms of milk were obtained from each cow in Uzbekistan in 1980 and at the end of the 11th Five-Year Plan -- almost 460 kilograms less. Moreover, the farms were supplied with more mixed feed. True, last year the milk yields increased somewhat. In all probability, the specialist-livestock breeders would agree with us that such cow productivity can be achieved in the absence of mixed feed. The opportunities for accomplishing this are literally at hand and their realization does not require tremendous capital investments but rather only a thrifty attitude towards the work. The republic's kolkhozes and sovkhoses can carry out six alfalfa cuttings and obtain up to 260 and even more quintals of excellent hay per hectare. In actual practice, a number of farms are limited at best to four cuttings and are obtaining not more than 80 quintals. Thus it comes as no surprise to learn that last year 34 percent of the republic's farms failed to fulfill their plans for selling milk to the state and 40 percent -- the task for meat procurements.

The farms of Kazakhstan possess tremendous potential for developing their animal husbandry operations. According to statistics, the farms here are better supplied with feed than farms in other republics. However, the

livestock productivity is very low. In 1985, each cow here produced an average of 1,993 kilograms of milk and last year -- 2,169 (the average for the country -- 2,604 kilograms).

Large fluctuations in feed expenditures are being observed among oblasts of the Russian Federation. Compared to an average of 1.57 quintals of feed units being expended throughout the republic in 1985 for a quintal of milk, in Astrakhan Oblast -- 2.57 and in the Kalmyk ASSR -- 2.08. Kolkhozes and sovkhoses in the Kabardino-Balkar, Checheno-Ingush and Buryat ASSR's are expending more than 2 quintals of feed units per quintal of milk and they are obtaining 1,963-2,480 kilograms of milk per cow.

This is not the first year that livestock have been maintained on a hunger ratio at kolkhozes and sovkhoses in Moldavia. But serious measures aimed at strengthening the feed base are not being undertaken here. The same holds true for Tyumen and Volgograd oblasts and Primorskiy Kray.

The specialists are well aware that the quality of the feed is largely dependent upon the conditions under which it was stored. Yes, practical steps alone accomplish very little towards realizing this well known truth. For example, the construction of feed storehouses is proceeding slowly in Ivanovo, Ryazan and Tambov oblasts. And it turns out that reliable facilities are not being made available for even modest supplies of forage (the forage crop yields are very low in these oblasts). Nevertheless, it must be stated that fine experience in the construction of these simple installations is available in a number of regions throughout the country.

Obviously, it is not only the storehouses that ensure the quality of the feed. Other conditions also play a role. One of them -- balancing the feed in terms of protein. The solution for this task lies within the capability of many kolkhozes and sovkhoses. They need only display a maximum degree of initiative and enterprise. Unfortunately, even on farms which possess a good potential for this work, for example in Amur Oblast where soybeans are grown, the quality of the feed leaves a great deal to be desired.

#### Expenditures Per Quintal of Meat

Feed expenditures for the production of meat are very high. During the last five-year plan, an average of 13.5 quintals of feed units was expended at kolkhozes and sovkhoses for a quintal of weight increase in cattle and on farms in Turkmenia -- almost 23, Uzbekistan -- in Azerbaijan -- almost 20 and in Kazakhstan and Tajikistan -- 19 quintals.

Shortcomings in organizing the use of feed resources are apparent in those republics where animal husbandry is being developed more intensively than in a number of other regions throughout the country. For example, this applies to farms in Belorussia and in the Baltic republics. A greater number of farms are now obtaining 5,000 kilograms of milk per cow and average daily weight increases during the fattening of cattle of 900-1,100 grams. A large number of pedigree animals are being shipped to other republics.

However, if we examine this situation from an economic standpoint, then an entirely different picture emerges. Although the norm calls for only 10 feed units per quintal of weight increase in cattle, the Belorussian livestock breeders are expending more than 13 feed units. For 1 quintal of weight increase in hogs -- almost 8 quintals of feed units. This is almost twice as much as is being expended on the country's best farms. And indeed many fine examples of zealous use of feed are to be found in Belorussia. For example, at the Gorodeyskiy Sovkhoz in Minsk Oblast the average daily weight increase in cattle is 904 grams, the average delivery weight per head is 447 kilograms and the feed expenditure per quintal of weight increase is 3.4 quintals less than the average for the republic.

The sovkhoses Voskhod in Mogilev Oblast and Yuzhnyy in Gomel Oblast, for an average daily weight increase during the fattening of hogs of 539-555 grams, are expending 5.4 quintals of feed units per quintal of pork, or 2.5 quintals lower than the average indicator for the republic.

Feed consumption is high on farms in Lithuania. Roughly 11.6 and 7.4 quintals of feed units are being expended respectively for a quintal of beef and pork. Moreover, a trend is being observed towards an increase in the expenditures of mixed feed. Thus, in 1982 3.11 kilograms of concentrates were expended in the republic for a quintal of weight increase in cattle, in 1984 -- 3.23 and by 1985 the expenditures of concentrated feed had increased almost to 3.5 kilograms. Over the past few years, kolkhoses and sovkhoses in Latvia have been expending 5.8-6.0 quintals of concentrated feed for a quintal of pork.

#### Causes of Overexpenditures

Analysis reveals that one of the chief causes of feed overexpenditures is the low quality of the feed and a lack of balance in the rations in terms of the principal nutrients, especially protein. Scientists have proven that the use of grain forage in the form of mixed feed, that is balanced in terms of nutritional and biologically active substances, raises its effectiveness by 20-25 percent.

Unfortunately, a considerable quantity of concentrated feed is still not being used in balanced form in a number of republics. In Belorussia, in 1985, of the 3,389,000 tons of mixed feed produced by enterprises of Minkhleboprodukt [Ministry of Grain Products], 45 percent was produced without the introduction of protein additives. Extremely inefficient use is being made of the grain forage made available from internal resources. Of 2,909,000 tons, only 16 percent was processed into mixed feed, with the remaining portion being used in the form of milled grain. In Lithuania, only 30 percent of the grain forage was processed into mixed feed. Nor was the situation any better in the Latvian SSR.

Many farms are not displaying proper concern for the quality of their forage. According to accounting data, only 52 percent of the hay checked on farms last year turned out to be of first class quality, 23 percent -- second class and 15 percent -- third class. Only 46 percent of the silage procured was of first class quality and 12 percent -- substandard quality. This data confirms the fact that the farms are sustaining heavy losses as a result of the low



quality of the coarse and succulent feed. Naturally, such feed does not provide a proper return. But the products become expensive once the forage has been expended and only limited output obtained. Indeed, many resources which are directly related to the production costs are expended for the cultivation of forage crops.

Allow us to cite some data on the production and use of feed resources on farms in the Russian Federation. Of the overall amount of feed expended at kolkhozes and sovkhozes, roughly 68 percent is for cattle, 12 percent for hogs and 9 percent for sheep. A trend is being observed towards a reduction in the amount of concentrated feed in the animal rations and towards an increase in the expenditure of coarse and succulent feed.

On many farms, particularly in the nonchernozem zone, serious attention is not being given to the efficient use of pasture lands, which occupy considerable areas here. As a rule, small expenditures for improving them and the use of fertilizers are making it possible to raise sharply the productivity of these lands. And indeed the pasture feed in many regions can serve as the foundation for the livestock ration during the summer.

In the case of hay -- the most important traditional feed for cattle and sheep -- its proportion is still not very high and its quality, as we have already noted, leaves a great deal to be desired.

It bears mentioning that farms in a number of regions have simply forgotten how to procure high quality hay during both inclement and good periods of weather. When there is periodical rainfall, the kolkhoz and sovkhoz specialists often fail to maneuver their resources properly so as to take full advantage of the good weather windows for the drying and harvesting of grasses and the feed tends to spoil. When stable and clear weather prevails, the mown grasses often lie for a week's time under the burning sun without movement and thus instead of high quality hay a type of straw is obtained.

On those farms where feed production was developed as an independent branch, one in which the work of subunits was organized on the basis of a collective contract and cost accounting, abundant amounts of high quality coarse and succulent feed are created for the farms under any and all circumstances. Importance is attached to ensuring that each kolkhoz and sovkhoz applies the same degree of responsibility to procuring feed as it does to the production of grain and technical crops.

Improvements in the feed base are dependent upon those enterprises engaged in producing equipment for the procurement of feed. Many serious complaints are still being lodged against these enterprises. In particular, the Gomelselmash PO and the Lyubertsy Zavod imeni Ukhtomskiy PO, the main producers of feed harvesting machines, are systematically failing to carry out their tasks for shipping such machines and they are not supplying the kolkhozes and sovkhozes with the spare parts required for them.

A very large portion of the concentrates is being made available to farms in a number of oblasts from the state resources. Thus, at kolkhozes and sovkhoses in Novgorod, Arkhangelsk, Pskov, Astrakan and Amur oblasts, in Primorskiy and Khabarovsk krays and in the North Osetian ASSR, the proportion of this feed during the 11th Five-Year Plan amounted to 60-81 percent.

Moreover, the mixed feed being delivered to farms and complexes from state plants is by no means nutritionally balanced (this accounts for 70 percent of the forage). Very little starter feed is being produced. Last year, one out of every three mixed feed plants where inspections were carried out tolerated violations of the requirements set forth in the normative-technical documentation and in the feed formulas.

Many kolkhozes and sovkhoses are continuing to supply feed to their animals that has not been properly prepared and this is lowering the return from the feed. During the last five-year plan, throughout the country as a whole, an annual average of 9.4 million tons of unprocessed grain was fed to livestock and poultry.

On the farms of kolkhozes and sovkhoses in the Russian Federation, where inspections were carried out during the 11th Five-Year Plan, only three fourths of the concentrates, less than one half of all of the coarse feed and approximately one half of the straw, was subjected to various types of processing. Nor was the situation any better on farms in other republics. As a result of poor quality forage, a low protein content in the animal ration and inefficient use of the feed, a considerable overexpenditure of feed occurred.

**Feed Consumption Per Quintal of Animal Husbandry Output At  
Kolkhozes, Sovkhozes and Other State Farms During the 11th Five-Year Plan  
(annual average, quintals of feed units)**

	Молоко (1)		Привес крупного рогатого скота (4)		Привес свиней (5)	
	(2) всех нормов	(3) в т.ч. конц. нормов	(2) всех нормов	(3) в т.ч. конц. нормов	(2) всех нормов	(3) в т.ч. конц. нормов
СССР (7)	1.55	0.37	13.5	3.06	8.8	7.26
РСФСР (8)	1.54	0.38	12.9	3.05	8.4	7.15
Украинская ССР (9)	1.60	0.35	13.0	2.71	10.1	7.66
Белорусская ССР (10)	1.41	0.29	12.7	2.98	8.4	6.76
Узбекская ССР (11)	2.23	0.59	20.4	5.47	13.7	12.04
Казахская ССР (12)	1.89	0.42	19.0	2.99	10.1	8.52
Грузинская ССР (13)	1.69	0.51	16.9	4.92	11.7	11.03
Азербайджанская ССР (14)	2.30	0.62	19.9	4.93	10.8	9.92
Литовская ССР (15)	1.14	0.23	11.2	3.35	7.5	6.26
Молдавская ССР (16)	1.47	0.36	13.5	3.03	8.1	7.23
Латвийская ССР (17)	1.38	0.32	10.5	2.97	7.2	6.11
Киргизская ССР (18)	1.94	0.53	16.1	3.98	8.9	7.62
Таджикская ССР (19)	1.87	0.39	18.8	4.25	10.1	8.70
Армянская ССР (20)	1.55	0.43	13.4	4.30	9.3	8.73
Туркменская ССР (21)	2.20	0.54	22.9	5.22	15.5	12.74
Эстонская ССР (22)	1.08	0.42	8.8	2.95	5.8	4.96

**Key:**

- |                                 |                    |
|---------------------------------|--------------------|
| 1. Milk                         | 12. Georgian SSR   |
| 2. All feeds                    | 13. Azerbaijan SSR |
| 3. Including concentrated feeds | 14. Lithuanian SSR |
| 4. Weight increase in cattle    | 15. Moldavian SSR  |
| 5. Weight increase in hogs      | 16. Latvian SSR    |
| 6. USSR                         | 17. Kirghiz SSR    |
| 7. RSFSR                        | 18. Tajik SSR      |
| 8. Ukrainian SSR                | 19. Armenian SSR   |
| 9. Belorussian SSR              | 20. Turkmen SSR    |
| 10. Uzbek SSR                   | 21. Estonian SSR   |
| 11. Kazakh SSR                  |                    |

In the decrees of the CPSU Central Committee and the USSR Council of Ministers concerning further improvements in the economic mechanism for management in the APK [Agro-Industrial Complex] and measures for rising the stability of the country's grain economy and increasing the grain forage resources, it is stated that the gosagroproms [state agroindustrial committees] of the republics are fully responsible for ensuring that animal husbandry is supplied with high quality concentrated feed that is properly balanced in terms of protein and other components and that the feed is utilized in an efficient manner. This means that more extensive use must be made of the local resources of kolkhozes, sovkhozes and industrial enterprises in the interest of increasing the production of feed protein. The responsibility of leaders of enterprises for the quality of the feed and for ensuring that they are properly balanced must be raised.

The experience of many farms reveals that a strengthening of the feed base, the efficient use of forage and growth in the productivity of animal husbandry are largely dependent upon the introduction of progressive technologies, the collective contract and cost accounting into feed production operations and for use on the farms.

This year's late spring imposed especially high requirements upon the farmers, including upon subunits engaged in feed production work. It seemed to compress the field work schedules and created a considerable amount of tension. At the present time, it is important not only to carry out the forage crop sowing work more rapidly and in a better quality manner but also to ensure that all of the feed harvesting equipment is delivered to the readiness line in a timely manner. Meanwhile, this work is being carried out slowly in a number of rayons.

Many machines required for the green harvest on farms in Kazakhstan are awaiting repairs. Here, over a period of a number of years, a considerable number of units have been unprepared for the start of the feed procurement work. Many kolkhozes and sovkhoses in Moldavia and a number of other republics are dragging out the repair work on their feed harvesting machines. They must make up for the lost time and accelerate the preparation of this equipment. The party, economic organs and specialists must exercise special control over the work of each subunit, create all of the conditions required for efficient work and organize an effective competition among the collectives for the best indicators in feed production work.

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## LIVESTOCK, FEED SECTOR PROBLEMS AIRED

## Intensive Measures Needed

Moscow PRAVDA in Russian 8 May 87 p 1

[Editorial: "More Intensive Methods for Animal Husbandry: Use Farm Potential Economically, Create Foraging Supplies On Time"]

[Text] Renovation is under way in the country's animal husbandry facilities, just like everywhere in the agroprom. Intensive methods and progressive technology are being more actively used here. At this time animal farms are shifting to summer work. Animal husbandry workers have set themselves the tasks of not losing output and, from the very first days of the pasture season, assuring weight gain. Competing to honorably celebrate the 70th Anniversary of the Great October Revolution, many have obligated themselves to beat the schedule to fulfill targets for the first two years of the five-year plan.

In recent years much has been done to develop the sector. This is bringing results. For example, in 4 months Belorussian dairy workers increased milk sales by 18 percent compared to the same period last year. There were large increases in output at farms in Tula and Kirov oblasts, while for the country as a whole, milk sales increased 7 percent and meat sales 11 percent.

Quality indicators are becoming a measure of animal husbandry workers' efficiency. Those sections which put primary emphasis upon economic methods of operating, are zealous and show interest in the common concern are the leaders in competition. A desire to be of even greater use to the sector prompted milking machine operator L. Bryzga, a Hero of Socialist Labor, to transfer to a section at the Pamyat Ilich Kolkhoz-Kombinat near Brest. She left her replacement a group of cows each producing almost 6 tons of milk annually and took charge of a group producing 2,900 kilograms per cow. Working in a family link with her husband, last year L. Bryzga averaged 5,580 kilograms per cow.

Many farms are skillfully using the advantages of intensive operations. These include the Za Mir Kolkhoz in the Lithuanian SSR, the 40 Let Oktyabra in Taldy-Kurgan Oblast, the Nazarovskiy Sovkhoz in Krasnoyarsk Kray, the Ploskovskiy in Kiev Oblast and others which have attained good economic results. However, returns at many farms still lag markedly behind investments,

neither is their efficiency very high. During the past five-year plan returns were extremely low at some specialized sovkhozes. Of course, resources should not be squandered. Specialists see the solution in the wider use of the advantages in the new economic mechanism and rational forms of organizing and paying labor. Thus, in the past three years the active mastery of collective contract and cost accounting [khozraschet] by animal husbandry workers in Tataria has made it possible for them to considerably increase the production of meat, milk and eggs and to markedly improve labor productivity.

Progressive methods helped the farm workers in taking a new approach. They begin to feel that they are masters of the situation, show interest in scientists' work and in the experience of those with carefully organized operations. However, some managers and specialists are not taking this into account. Often contract links and brigades are formally set up without the required preparations or guaranteed feed supplies. Some collectives are not given independence and there are infringements upon their rights to manage production. Prices for their products are sometimes repeatedly and unjustifiably changed. All this hinders the development of intensive labor collectives.

The flow line and shop system for dairy operations is acknowledged by dairy farm workers. However, in spite of its clear advantages it has only found application on one-third of dairy farms. The innovation is being slowly introduced in the Transcaucasus, Central Asia, Smolensk, Volgograd, Tambov and Kursk oblasts. Agroprom organs and farm managers are not everywhere concerned about the modernization of farms and their comprehensive development. Errors in creating the forage base are especially intolerable. Last year lessened attention to this matter was costly to farms in Tyumen Oblast, as their milk output declined immediately. Kirovograd farms' shortcomings in herd reproduction caused increases in production costs and labor outlays. Ever important is the situation in which people work and how they are paid. It might seem trivial -- a glass of tea during a work break, but it creates an attitude where people see real concern about them.

The herds are going out to pasture. Farm work rhythms are accelerating. Spring is the time when large numbers of animals are born. Moreover, the lack of roads hinders production. It is important to skillfully dispose of forage so that there is enough until the new harvest, to keep offspring alive and not let animal productivity decline. It is also time to think the summer areas for animals, their water supplies and pasture selection. The main thing is to create a forage conveyor which will supply animals with feed from early spring to late autumn and build up reliable supplies for winter. This is being done by progressive farms in Belogorod, Omsk and other oblasts, who are orienting forage production workers towards high yields of green chop, the storage of sufficient amounts of hay, haylage, silage and root crops.

However, not everybody is on schedule in preparing for haying season. In Uzbekistan and Turkmenia many kinds of forage harvesting equipment are unrepared. This will cost dearly. Nothing can be left to chance in this important matter. A program for reliable forage supplies and rations which completely meets farm needs for vegetable protein and other nutrients should be developed and strictly introduced at each kolkhoz and sovkhoz. Machinery

builders, chemical industry workers and those in other ministries and departments have been called upon to help the countryside in this. Feed preparation workers need highly productive and reliable machinery for cutting grass and forage crops, equipment, preservatives, plastic film and other items. However, a number of enterprises, especially in Minzhivmash [Ministry of Machine Building for Animal Husbandry and Fodder Production] are not handling their tasks, are not making deliveries, often produce defective and low quality equipment. The situation requires rapid correction.

Precision in work is a constant requirement of all animal husbandry workers. In order to obtain high labor and technological discipline, there should be an atmosphere of goodwill and exacting demands in the collective. A situation of comradely mutual help arises if there is widespread openness, comparability of results and common solutions to problems. In any animal husbandry operation there are reserves. It is the task of party and economic management organs, managers and specialists at kolkhozes and sovkhozes to thoroughly use these reserves and focus the efforts of competitors towards the skillful use of production potential. The main thing is to prevent reductions in animal productivity.

In raising the activity levels of animal husbandry workers, party organizations are more quickly responding to their requests and needs. Soviet and trade union organs should show more concern about animal husbandry workers' daily lives.

Animal husbandry workers have made a good start in this five-year plan. It is important to consolidate successes so that everybody follows the example of progressive units -- obtaining more products at less cost.

#### Regional Progress, Shortcomings

Moscow SELSKAYA ZHIZN in Russian 19 Apr 87 p 3

[Article by N. Skorolupov: "Don't Get Behind: Now That Winter Is Over, Don't Let Livestock and Poultry Productivity Fall"]

[Excerpt] The USSR Central Statistical Administration reports that in the first quarter, kolkhozes, sovkhozes and interfarm enterprises sold 5.5 million tons of livestock and poultry (live weight), 400,000 tons more than during the same period last year, delivered 14.5 million tons of milk and 14.2 billion eggs. This is also more than last year.

Appropriately, the increased production and sales were attained mainly through intensification. Since the start of the year, the dairy herd's productivity per cow has increased by 33 kilograms. The quarterly plans for selling, milk, meat and other animal products were met ahead of schedule. Since the start of the year Belorussian animal husbandry workers have produced 1,071,000 tons of milk, 12 percent more than last year. Workers on animal farms in the RSFSR, Kazakhstan and Uzbekistan have exceeded the countrywide figures for increasing milk production.

A animal husbandry workers in Estonia increased milk production by 6 percent, while the farm workers in Latvia and Lithuania competing with them only increased it by 4 percent. The Estonians were badly off with regards to meat sales: they only shipped 62,000 tons (live weight) for processing, this is 89 percent of the amount for the same period last year.

As always, workers in the RSFSR Agro-industrial Complex made the greatest contribution to the country's food resources. Since the start of the year, farms in the republic have sold 2,775,000 tons of livestock and poultry. The plan was 120 percent fulfilled. This level was exceeded by kolkhozes and sovkhoses in the Central-Chernozem, Volga and North Caucasus economic regions.

In the Northwest Region farms and complexes in Leningrad Oblast worked well. They shipped 60,600 tons of livestock and poultry to processors. This is more than 8,000 tons over the plan. Novogoroders also overfulfilled the plan. Kolkhozes and sovkhoses in Pskov Oblast were the only ones in the republic not to fulfill it. They are short by small amounts of meat and 1,200 tons of milk. Half the rayons are behind.

Perhaps kolkhozes and sovkhoses in the oblast exhausted their possibilities for increasing the efficiency of animal husbandry? No! In recent years sizable resources have been invested to strengthen their material technical base. However, they are not bringing returns. Managers and specialists at local farms and RAPO workers have repeatedly promised that by using internal reserves they would increase animal productivity and improve the sector's efficiency. However, it turned out that they were rich on promises but not in specific deeds.

Workers at the oblast agro-industrial committee are supporting them. How much time and effort they have spent developing measures to accelerate animal husbandry's progress! But these measures still remain only on paper. During this time in Krasnogorodskiy, Kuninskiy, Porkhovskiy, Sebezhskiy and Pushkingorskiy farms reduced their animal productivity, which was low before this. Meat output also declined sharply.

Is this an alarm bell for workers at the RAPO and Oblagroprom? Animal husbandry workers are waiting in vain for help.

Several farms in Bryansk Oblast are also getting behind. In the first quarter 12 rayons produced less meat than during the same period last year. In Zhiryatinskiy and Pogarskiy rayons they did not fulfill the quarterly plan for milk sales. Since the first days in April there has been lagging in milk yields in Krasnogorskiy, Pochepskiy, Unechskiy and Novozybkovskiy rayons.

At a recent obkom buro meeting there was a sharp and principled discussion about shortcomings in animal husbandry. It was deemed necessary "to take the most decisive measures for completing livestock wintering and to prevent declines in their productivity." This is a familiar situation where the work and specific help to lagging farms are sinking in a paper flood of all sorts of circulars.



The situation in Kurgan is encouraging. Animal husbandry workers were ahead of schedule in fulfilling the quarterly plan. True, there is cause to be concerned about one thing: will the good report figures create complacency? Dairy workers in the oblast only increased milk yield by 6,8 kilograms per cow, 400 grams less than the same period last year. There have been sharp reductions in animal productivity in Almenevskiy, Mokrousovskiy and other rayons. There have also been reductions in reproduction rates, while loss rates for young animals are considerably higher than RSFSR averages.

Unfortunately, these are not the sole cases. There have also been sharp reductions in livestock productivity on kolkhozes and sovkhoses in the Chuvash ASSR. Here many are working and looking back on the laggards. The party obkom is not missing the opportunity and is constantly saying that with regard to meat and milk production per 100 hectares Chuvashiya has no equals among neighboring oblasts and republics. To support this it cites figures and shows appropriate economic calculations. Let the neighbors reach our levels, they say. Then it will be our turn to work on the sector's intensification. Such complacency is picked up by kolkhozes and sovkhoses.

The country's animal husbandry workers feel it is their duty not only to maintain, but to increase the growth rates for the production of meat, milk and other animal products. Experiences at leading competitors shows that they have quite a few reserves for the sector's intensification and should use them more completely.

11574

CSO: 1824/259

## PRICE REFORM IN INDUSTRIAL SECTOR ADDRESSED

Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 31 Mar 87 p 2

[Article by A. Boldyrev, economist: "Who Sets the Price?"; first paragraph is SOTSIALISTICHESKAYA INDUSTRIYA introduction]

[Text] The decision to have a nationwide discussion on the Draft Law has the purpose of raising the activity level of the broad masses of working people, having overcome conservatism in administration. In this connection, we must not permit a repetition of the mistakes of past changes in the economic mechanism whereby, under pressure from the departments, the Union Gosplan, Gosstroy, Goskomsen [State Committee on Prices], and the Ministry of Finance instead of replacing obsolete economic principles, especially cost-based price formation, decided to influence production economics by means of "good" volume indicators.

The Draft Law also has articles which were obviously written from the viewpoint of departmentalization. Take, for example, Article 1, Paragraph 3, where the principal task of an enterprise is stated to be satisfying public demand and that of citizens by its products, projects, and services. At first glance, it looks like all the words in this paragraph are correct. But if you read it carefully and penetrate into its essence, it turns out that in satisfying the needs of the consumer, the enterprise is concerned primarily with increasing the well-being of its own collective's members. Not a single word is uttered to the effect that satisfying the needs of society should be based solely on reducing prices on and improving the quality of the items being produced.

The principal error of all the previously conducted changes in the economic mechanism consisted precisely in the fact that they moved to the foreground the interests of the enterprises, and at times simply the profit-seeking interests of the directors--to the detriment of the interests of the state and the entire society. This tendency is clearly present in the Draft Law.

Let's recall the following points: the Resolution of the CPSU Central Committee and the USSR Council of Ministers on Improving the Economic Mechanism (1979, No 695) adopted the new principle of price formation. The ministries, however, however, compelled USSR Goskomsen to retain the previously operative conditions of adding profits into the wholesale price

mix. It permitted the exclusion from the production cost not the entire cost of the objects of labor but merely the direct material outlays: if, for example, the cost of fuel and energy is not accounted for separately, then it is not excluded. Moreover, the magnitude of the profits within the new wholesale prices was adjusted under the level of the profits in the old prices, within which they were set predominantly (as much as 70-80 percent) from the costs of the objects of labor. As a result, within the new prices the profits, just as before, did not correspond to the material output of labor, i.e., in the prices of certain items they were too low, while on other items they were unjustifiably high. And this has engendered a variegated profit-level on items, along with a steady trend toward making goods more expensive.

It would seem that restructuring ought to primarily affect the questions of price formation. But neither in industry nor in construction are there intentions to change it. Furthermore, based on the accepted method of setting profits within the mix of the wholesale price, it is intended to use agreed-upon prices (Article 17, Paragraphs 7 and 9). This will impart still greater force and even legitimate grounds for justification to the process of making items more expensive. The fact of the matter is that the enterprise producing the item and the enterprise handling it in trade are equally motivated to raise prices. The only not so motivated is the customer, i.e., the entire society. But nobody from among the latter has made inquiries about the establishment of agreed-upon prices. Hence, they can be "inflated," just as prices are now rising on items within the "N" index.

Agreed-upon prices, which certain readers have set their hopes on during the course of discussing the Draft Law, have yet another bad feature. They are incapable of eliminating shortages, even though they have been adopted specifically under the banner of combatting such shortages by means of expanding the production of those goods which are in short supply. In fact, for an enterprise that has established agreed-upon prices on items, it no longer makes sense to expand production. It will keep the customer on "starvation rations" as long as possible. In chasing after an excessive profit, it will most likely attempt to cut back on producing other items so as to bring them down under the level of the agreed-upon prices. With the aid of agreed-upon prices, industry will be able to "self-finance" itself by means of higher profits, obtained by creating a pre-planned shortage.

Agreed-upon prices in construction are even more ruinous than they are in industry. This is connected with the fact that they have been disseminated to all construction sites and introduced beginning in 1987 without any sort of necessary preparation, even though they were put forth as an extremely important element in the new economic mechanism. A campaign was unleashed containing all manner of praise for the new trend, even including the premeditated assertion that agreed-upon prices would permit a reduction of the estimated cost of construction, and that they are supposedly a factor militating against cost outlays.

This is untrue. Even if only because agreed-upon prices, more so than today's estimated construction costs, on the total of the "spread," which the contractor, in agreement with the client and the planning organization,

decides to obtain from the state and share among themselves for the payment of bonuses and other necessities. This is indulgence for the contractors; this is the latest repetition of mismanagement and squandering.

Try dropping in for a visit to a construction site, surrounded by a high, continuous fence. At your first step through the gate, you will undoubtedly run into a pile of poured out cement or a puddle of poured mortar; at your second step, you will stumble onto a block of hardened concrete; at your third step, you will encounter a snare of wire which is sticking up as a kind of "monument" to an eternally interred, entire coil.... But the contractors obtain their profits.

The overhead expenses and planned accumulations in favor of the contracting organizations are charged within the mix of the estimated cost from the full amount of the direct outlays (materials, wages, and use of equipment). In connection with this, the lion's share of the revenues is directly proportional to the value of the "shoveled-up" materials rather than to the work. There is a long-standing question about changing price formation in construction, but USSR Gosstroy has been completely unable to persuade the contracting ministries, even though it is high time that it used its authority to do so.

In order to exclude wasteful phenomena in the economy and effectively carry out restructuring and the acceleration of socio-economic development, we must adopt the following integrated system of price formation: profits within the mix of wholesale prices, overhead expenses and plan accumulations within the mix of the estimated construction costs should be charged from the outlays for live labor (payment wages) and increases in the productive manpower (amortization), applying the same norm of profitability in all sectors of industry and the all-union norm for incomes in construction. That is, according to the principle which was promulgated by Resolution No 695 of the CPSU Central Committee and the USSR Council of Ministers as far back as 1979. The wages and amortization are formed under nationwide conditions, and, therefore, there is no economic justification for various profitability rates among enterprises, as are accepted at present.

In order to enhance the role of economic incentives for improving the quality of goods and structures, it would be feasible to establish that the state quality norm be the evaluation "good." Only at this level would the established norms of profitability and plan accumulations be applied, as well as the production norms for those who execute the projects. In the event of outstanding quality, profits and plan accumulations are increased, whereas production norms for workers are reduced. In case of satisfactory quality, things are the other way around.

In my opinion, this is the only way that we can guarantee that the profits of enterprises and the wages of workers be justified by the material output of labor, that the interests of enterprises and individual employees coincide with the interests of the state and of the entire society.

2384

CSO: 1827/81



## NEW DECREE ON EVERYDAY SERVICE COOPERATIVES

Moscow SOBRANIYE POSTANOVLENIY PRAVITELSTVA SOYUZA SOVETSKIKH SOTSIALISTICHESKIKH RESPUBLIK (OTDEL PERVIY) No 11, 1987 pp 227-232

[Decree of the USSR Council of Ministers on the Establishment of Cooperatives for Everyday Services for the Public, 5 Feb 1987]

[Text] The USSR Council of Ministers notes that in accordance with the decisions of the 27th CPSU Congress work on an accelerated development of everyday services for the public has unfolded in the country. The sector's material and technical base has been strengthened, its outfitting with modern equipment has increased, the network of enterprises has expanded, and the volumes of everyday services provided to the population have risen.

Enterprises and organizations of all ministries and departments irrespective of their specialization and nature of basic activity have been enlisted in this work. Manufacturing ministries organize technical services by firms for complex household equipment belonging to citizens.

At the same time, the needs of the public for everyday services are not met fully. There are significant potentials for improving everyday services through a fuller utilization of the labor of pensioners and other citizens not employed in public production and, in particular, through the organization of cooperatives. These cooperatives, in addition to the existing network of state everyday service enterprises, could provide services in great demand by the public and flexibly react to its change.

For the purpose of further improving everyday services for the public, widely enlisting citizens in the provision of everyday services, and developing their initiative, the USSR Council of Ministers decrees:

1. To consider it advisable to establish cooperatives for everyday services for the public under administrations (departments) of executive committees of local soviets of people's deputies, production associations (enterprises), and organizations of the system of ministries for everyday services for the public of Union republics and of other ministries and departments irrespective of the nature of their basic activity, as well as under housing operation organizations.

Cooperatives are established on the initiative of citizens joining them and of executive committees of local soviets of people's deputies.

To concentrate the activity of cooperatives on the provision of services connected with the repair of apartments, buildup of orchard-garden and private plots, maintenance and repair of transport facilities belonging to citizens, repair and manufacture of custom-made metal articles and furniture, supervision of children, and care of patients and the aged, as well as on the provision of hairdressing, middleman, and other everyday services in great demand by the public in cities and rural areas.

Basically, citizens not employed in public production, that is, pensioners, housewives, students, and pupils, are admitted to cooperatives.

Enterprise, organization, and institution workers can work in cooperatives on the basis of a labor agreement during free time from their basic work. Restrictions established by existing legislation for holding several jobs simultaneously are not applied in this case.

Students, pupils, workers, employees, and engineering, technical, and other personnel can be enlisted in the performance of individual jobs on the basis of a contract during leaves and vacations.

When cooperatives are formed, executive committees of local soviets of people's deputies, as well as associations (enterprises) and organizations, under which cooperatives are established, transfer buildings, premises, equipment, and other property pertaining to fixed capital to them on a lease basis or for charge-free use. Funds for the purchase of physical assets pertaining to circulating capital, which are needed for the beginning of cooperative activity, are formed from short-term credits issued by the USSR State Bank.

2. To establish that cooperatives for everyday services for the public:

a) operate on the basis of self-support [samookupayemost] and self-financing in accordance with the charter adopted at the general meeting of cooperative members;

b) independently develop and approve plans for production and economic activity and send them to the management body, association (enterprise), and organization, under which they are established;

c) independently set prices of everyday services provided by a cooperative;

d) pay income tax to the local budget during the first year after their establishment at the rate of 2 to 3 percent, during the second year, 3 to 5 percent, and during subsequent years, 10 percent of the cooperative income after deducting expenses for raw materials, supplies, depreciation, payment for services of outside organizations, transport costs, expenses for bank credit use, and contributions for state social insurance. Specific tax rates within the indicated limits are set by the executive committee of the local soviet of people's deputies registering the cooperative charter;

e) after the income tax payment assign the income left at their disposal to the cooperative development fund, to the insurance fund, and for cooperative workers' wages.

Earnings of cooperative members are determined in accordance with the quantity and quality of labor and personal contribution to income creation.

The procedure of deducting funds for the formation of development and insurance funds is determined by the cooperative charter;

f) are serviced by repair and installation enterprises (organizations) for everyday services for the public.

3. To establish that:

the volume of realization of everyday services provided by a cooperative for everyday services for the public is included in the report on the fulfillment of the plan of a management body, association (enterprises), and organization, under which cooperatives are established;

wages for cooperative members are paid according to wage-rates (salaries) and piece-rates and for workers and employees accepted for work at cooperatives, on the basis of the terms stipulated by the labor agreement. Payment for jobs performed on the basis of a contract is made in accordance with it.

4. To retain received pensions, as well as grants at the place of study and wages at the place of basic work in their full amount, for members of a cooperative for everyday services for the public and individuals working at a cooperative on the basis of a labor agreement.

5. Executive committees of local soviets of people's deputies, on whose territory cooperatives for everyday services for the public are established, should:

jointly with appropriate management bodies, enterprises, and organizations implement organizational measures necessary for the establishment of cooperatives, as well as widely notify the population of this, and determine the sphere of their production and economic activity;

give cooperatives assistance in strengthening their material and technical base and in providing them with raw materials, supplies, and transport;

adopt a decision on the registration of cooperative charters within a 20-day period after receiving applications from cooperatives;

exercise control over the work of cooperatives.

6. Cooperatives for everyday services for the public utilize primarily local and secondary raw materials and supplies for their production and economic activity.

To permit:

management bodies, associations (enterprises), and organizations, under which cooperatives are established, to allocate material and technical resources for sale to these cooperatives;

retail-trade enterprises and organizations of the USSR Ministry of Trade, of the Central Union of Consumer Cooperatives, and of ministries and departments, which have a trade network, to sell materials, accessories, spare parts, tools, and small-size equipment for everyday purposes for cash payment;

the USSR Gossnab and its territorial bodies to sell raw materials, supplies, spare parts, tools, and equipment to cooperatives for filling the population's orders for everyday services;

enterprises (organizations) to manufacture for cooperatives on orders from management bodies, associations (enterprises), and organizations, under which they are established, parts and billets for filling orders for everyday services with an inclusion of these articles in the volume of consumer goods production of manufacturing enterprises (organizations);

enterprises and organizations to provide transport services for cooperatives on a contractual basis and to repair the machinery, equipment, and transport facilities belonging to them.

Associations, enterprises, and organizations to sell unutilized commodity stocks available to them to cooperatives in accordance with the procedure envisaged by the decree No 1425 dated 28 November 1986 of the USSR Council of Ministers.

Cooperatives buy consumer goods and products for production and technical purposes at retail prices or wholesale prices with coefficients established by the USSR State Committee for Prices and, in their absence, at prices determined in accordance with the agreement between the parties.

Cooperatives are forbidden to sell spare parts, accessories, and other articles without providing appropriate everyday services for the public.

7. The USSR State Bank should grant cooperatives for everyday services for the public:

long-term credits for the purchase of small-scale mechanization equipment and for other expenses for the expansion of fixed capital with credit liquidation within 2 years from the day of issue of the first loan;

short-term credits for the purchase of physical assets pertaining to circulating capital.



8. For the use of credits cooperatives for everyday services for the public pay the bank:

for long-term credits, 0.75 percent; for overdue loans, 3 percent;  
for short-term credits, 1 percent; for overdue loans, 3 percent.

For funds in cooperative accounts the USSR State Bank pays an annual interest of 0.5 percent.

9. To permit members of a cooperative for everyday services for the public to use private motor transport, equipment, tools, and premises for fulfilling the tasks facing the cooperative with a reimbursement of expenses for their utilization by the cooperative.

10. Members of a cooperative for everyday services for the public are subject to state social insurance in accordance with the procedure established by legislation. For this the cooperative pays appropriate sums to the state social insurance fund in amounts set for municipal and everyday enterprise workers.

Management bodies, associations (enterprises), and organizations, under which cooperatives are established, provide social and cultural-everyday services for cooperative members, granting them the right to use services of general health institutions, clubs, kindergartens, pioneer camps, and other social and cultural institutions.

11. Cooperatives for everyday services for the public, which are unable to carry out their activity on the basis of the principles of self-supporting production and self-financing, are subject to liquidation.

At the same time, time payments due from a liquidated cooperative in connection with an injury or other damage to health, or a worker's death through the cooperative's fault, are ensured by the management body, association (enterprise), or organization, under which cooperatives are established.

12. Councils of ministers of Union republics, the USSR State Committee for Labor and Social Problems, and the USSR Ministry of Finance must give the necessary explanations concerning the procedure of managing the financial and economic activity of cooperatives for everyday services for the public.

13. To approve the attached Model Cooperative Charter for Everyday Services for the Public.

11439

CSO: 1827/73

## FUEL EXTRACTION, ENVIRONMENTAL FACTORS VIEWED

Moscow IZVESTIYA AKADEMII NAUK SSSR: SERIYA EKONOMICHESKAYA in Russian No 2, Mar-Apr 87 pp 74-84

[Article by S. I. Pomazanov and T. D. Semenova: "Impact of the Natural Factor on the Effectiveness of Fixed Capital in Fuel-Extraction Industries"; first paragraph is introduction]

[Text] This article collates the results of studies carried out to determine the impact of the natural factor on the effectiveness of fixed capital in the fuel-extraction industries. The mathematical tools employed are generating functions and regression analysis. Two periods of time in the development of the fuel-extraction industries were examined (1965-1975 and 1976-1985) and a conclusion was drawn about the increase in the negative impact of the natural factor on the dynamics of the generating indicator -- the capital-output ratio of Period II as compared with Period I. Indicators were examined that typify the technical level of fixed capital in the years of the Eighth to the Eleventh five-year plans, and on the basis of this analysis the conclusion was drawn that the rate of decline in the yield of fixed capital can be slowed down and stabilized only by speeding up scientific and technical progress in the fuel-extraction industries. Several ways of doing this are shown.

Our country's national economy has entered a new and responsible stage of a qualitative transformation of our productive forces and of a decisive turning onto the road of intensive development. As its principal strategic thrust in the intensification of the national economy the Communist Party of the Soviet Union has moved into the foreground a major acceleration of scientific and technical progress and the reequipping of all sectors of the national economy on the base of the latest advances in science and technology.

An essential precondition for accelerating the country's socioeconomic development is constant improvement in production ratios and substantial restructuring of the economic mechanism. These processes are going on simultaneously with the transformation of productive forces and the restructuring of the economy. Particular attention is being devoted to accelerating the development of machine building and especially of those sectors of it that determine technological progress, to the technical reequipping of the sectors of the national economy, to accelerating the replacement of producer goods, etc.

Of special importance among the measures now being implemented is the shift of enterprises and organizations to a two- or three-shift system of operation. As emphasized at the session of the 11th Convocation of the USSR Supreme Soviet, augmenting the shift system will lead to specific economic results -- growth in the output of goods, increased labor productivity, complete utilization of highly productive contemporary equipment, better utilization of existing productive floor space, and reduction in investments to set up new production facilities [3]. All this will also lead to an improved capital-output ratio in industry.

The fixed productive capital of all sectors of the USSR's national economy exceeds 1.6 trillion rubles, it comprises 44 percent of the country's national wealth, and is the foundation of its economic might. In recent years, however, the utilization of the potential of productive capital has not been effective enough. In 1981-1985, for example, the productive capital of all sectors of the national economy grew by 37 percent, but the gross social product grew by 19 percent, and national income by 17 percent [4].

As pointed out at the 27th CPSU Congress and the June (1986) Plenum of the Party's Central Committee, a considerable part of productive capital is obsolete, as a consequence of which the sphere of capital repair has expanded excessively. The number of new work places has grown but this has been accompanied by a feeble mechanization of production. The proportion of manual labor is declining slowly. Even though the intensive expansion and technical improvement of production exert particularly high demands on the capital-output ratio, the negative trend for the latter to decline has not been overcome.

The problem of improving the effectiveness of the fixed capital of the fuel-extraction industries is an integral part of the overall problem of improving the effectiveness of the fixed capital of the national economy, although it has its own peculiarities caused by the specific nature of production in the extraction industry.

The outstanding feature of the extraction industry consists of the fact that in this sector, to a higher degree than in other sectors, the level of effectiveness of expenditures (including investment and fixed capital) depends on the natural conditions of production. The great diversity of these conditions determines the considerable disparity of this level in the sector's enterprises. The productivity and distribution of the fields, their depth and the conditions of their occurrence, and the quality of the mineral resources determine the level of expenditures and the effectiveness of fixed capital. The mining industry, as Karl Marx noted, "consists not only of social, but also of natural labor productivity... It is possible for an increase in social productive force... to be simply compensated, or even not completely compensated, by a decrease of natural force, and in any case this compensation can have an impact only for a certain time, since, despite technical progress, the product does not become cheaper, but merely wards off becoming even more expensive." [1]

A typical mark of natural resources is that their quality and quantity are limited, as shown by the relative shortage of easy-access reserves with highly useful attributes.

To satisfy industry's growing demand for raw materials and fuel the need has arisen to also develop relatively poorer reserves, and this has an impact on the economic indicators of social production, including the return on fixed capital.

The capital-output ratio occupies a special place among the indicators of the effectiveness of fixed capital. It is a direct and generalized indicator of its effectiveness and is expressed as the ratio between the volume of goods produced and the volume of productive capital. Improvement of the capital-output ratio reflects the savings achieved in production of prior labor embodied in fixed productive capital. In fact, with the proper utilization of a work force with the same qualifications and under conditions of the same labor intensity, the growth of goods produced will be linked only to increase or improvement in the means of production. Consequently, the capital-output ratio indicates the technical-economic level of productive capital and the degree to which it is utilized. But the output of goods and its growth are the result of the labor of workers with different qualifications and working at various intensities and under conditions where they are unequally equipped with tools. Part of the increase in output can be attained by increasing the use of the labor force, with the same magnitude and degree of utilization of fixed capital. In this case the growth in capital-output ratio cannot be regarded as the result of increasing the effectiveness of utilizing fixed capital. This situation often occurs, for example, in underground coal mining, when it is being done partially with the use of drilling and blasting and non-mechanical extraction, and with the use of pneumatic drills.

The proportion of manual labor in mines thus amounts to more than 45 percent (47.6 percent). The largest proportion of manual labor goes into the upkeep and repair of works and haulage track (almost all this work is done manually -- 98.8 percent) and on preparatory operations -- 53.6 percent. In the past 10 years the proportion of manual labor has declined mainly in extraction operations, while in the other stages this indicator has been almost unchanged. At open pit coal mines the proportion of manual labor amounts to 37.7 percent, 14.4 percent in oil extraction, and 11.8 percent in the gas industry. However, these figures do not include manual labor done by workers engaged in the adjustment and repair of machines and equipment.

Neither work by itself, nor productive capital considered in isolation, without the link to their being put into effect by living labor are factors in the growth of the social product, but they become so only in the act of joining together in the process of labor. From the moment they combine an objective possibility opens up of measuring the effect of each of them on the volume of the product created by society.

For this computation we may make use of the qualitative relationship that the economic literature calls the productive function. To determine the weights



of the effect of live and embodied labor on the output of the fuel extraction sectors functions have been computed for each industry (oil producing, gas, and coal) for two periods: I -- 1965-1975 and II -- 1976-1985. As a result coefficients were obtained of the elasticity of the gross productivity for fixed capital ( $\beta$ ) and for the number of industrial-production personnel ( $\alpha$ ). It is well known that these coefficients show how much output changes for each 1 percent of increase in fixed capital and number of persons employed.

Table 1 shows the coefficients obtained of the elasticity of gross production for fixed capital.

Analysis of the results obtained make it possible to draw the conclusion that the differential productivity of fixed capital, i.e., the growth of output with an increase in magnitude of fixed capital by 1 percent, decreased in Period II as compared with Period I in all the fuel extraction sectors, and in 1976-1985 in the oil-producing sector it amounted to 30 percent of the 1965-1975 figure, to 84.5 percent in the gas industry, and 94.4 percent in the coal industry.

Table 1

Differential Productivity of Fixed Capital in the Fuel-Extraction Sectors (in the numerator --  $\beta$  and in the denominator -- % of coefficient  $\beta_I$  of the coal industry is taken as 100 %)\*

Отрасли промышленности I	$\beta$		$\beta_{II} - I$
	2 I период	3 II период	
4 Нефтедобывающая	$\frac{0,532}{160}$	$\frac{0,163}{50}$	0,306
5 Газовая	$\frac{0,608}{180}$	$\frac{0,516}{150}$	0,845
6 Угольная	$\frac{0,339}{100}$	$\frac{0,320}{90}$	0,944

\*Computation by authors with the aid of a BESM computer based on study [5].

Key:

- |                            |                  |
|----------------------------|------------------|
| 1. Sectors of the industry | 4. Oil-producing |
| 2. Period I                | 5. Gas           |
| 3. Period II               | 6. Coal          |

Table 2

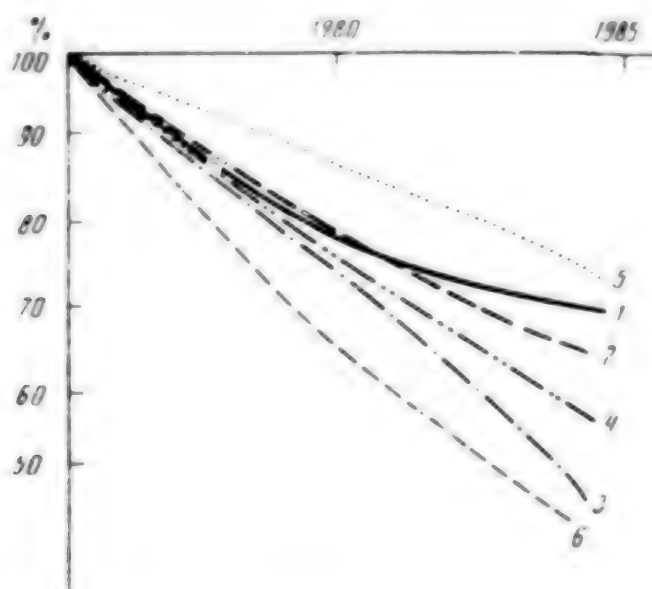
## Rate of Decline of Capital-Output Ratio, % of 1965\*

Отрасли промышленности	1970 г.	1975 г.	1980 г.	1985 г.
2 Нефтедобывающая	94,8	83,5	61,4	38,5
3 Газовая	80,2	52,9	41,3	36,7
4 Угольная	88,2	82,3	65,8	54,4

\*Source -- studies [5 and 6].

## Key:

1. Sectors of the industry
2. Oil-producing
3. Gas
4. Coal



Dynamics of Capital-Output Ratio. I. Actual: 1 -- in the gas industry, 2 -- in the coal industry, 3 -- in the oil-producing industry; II. Differentiated: 4 -- in the gas industry, 5 -- in the coal industry, 6 -- in the oil-producing industry.

Where a 1 percent increase of fixed capital in the oil production in Period I caused gross production to increase by a factor of 1.6 more than in the coal industry, in Period II that increase of fixed capital led to a growth of gross production only one-half as much in the oil-producing industry as in the coal industry. In the gas industry a 1 percent increase of fixed capital led to a growth of gross production in the sector in Period I that was greater by a factor of 1.8 and in Period II greater by a factor of 1.5 than in the coal industry. The greatest growth in gross production was therefore observed in both Periods I and II in the gas industry. The lower differential productiv-

ity of fixed capital is evidence of its decreased effectiveness as compared with Period I in all the fuel-extraction sectors.

On the basis of the coefficient of elasticity ( $\beta$ ) and the data on actual increases in fixed capital the dynamics has been obtained of the differentiated capital-output ratio of the fuel-extraction sectors. The graph shows the change in both the actual (complete) capital-output ratio and the differentiated ratio for the past 10 years, and Table 2 shows the rate of decline of the actual capital-output ratio for 1965 for the fuel-extraction sectors.

The dynamics of the capital-output ratio shown in the graph and the data shown in Table 2 are evidence of a systematic decline in the actual and computed capital-output ratio in all the fuel sectors. Moreover, the differentiated ratio in the gas and oil-producing sectors has declined more rapidly than the actual ratio, and in the coal sector, on the other hand, the decline has been slower. This is due to the higher individual effectiveness of manpower in the oil-producing sectors compared to the coal industry and to the smaller amount of manual labor in them.

Undoubtedly, the drop in the capital-output ratio has been caused by the considerable increase in the growth rate in the supply of fixed capital to labor over the growth rate of labor productivity (Table 3).

The coefficients of elasticity computed are evidence that to secure 1 percent of growth in labor productivity gets more expensive every year (the coefficients of elasticity for the capital-labor ratio are growing) in the oil-producing and coal sectors of the industry. In the coal industry there was no increase in labor productivity in the 10th or 11th five-year plans, or in the oil-producing industry in the 11th. The trend in the gas industry was different: a 1 percent growth in labor productivity was achieved by a 2.5 percent growth of the capital-labor ratio in the 10th Five-Year Plan and of 1.2 percent in the 11th.

Coefficients have been obtained for the substitution of labor by the industrial fixed capital, which make it possible to determine the quantity of workers hypothetically freed because of growth of the capital-labor ratio for a specified period. The cost of freeing one worker in the gas industry more than doubled during the 11th Five-Year Plan as compared with the Ninth. In the oil-producing and coal industries the introduction of fixed capital did not free up but increased the number of industrial workers engaged directly in production.

Table 3

Dynamics of Growth Rate of Labor Productivity and Capital-Labor Ratio in the Fuel-Extraction Sectors, %

Отрасли промышленности 1	Производительность труда 2	Фондовооружен- ность 3	Коэффициенты эластичности (прирост фондовооруженности в расчете на 1% прироста производительности труда, %) 4
5 Нефтедобывающая 1971—1975 гг. 1976—1980 гг. 1981—1985 гг.	6.5 3.2 -1.9	9.4 9.2 9.7	1.4 2.8 Нет прироста производи- тельности труда 8
6 Газовая 1971—1975 гг. 1976—1980 гг. 1981—1985 гг.	6.3 7.6 5.2	15.5 13.2 6.2	2.5 1.7 1.2
7 Угольная 1971—1975 гг. 1976—1980 гг. 1981—1985 гг.	5.1 -1.3 -0.8	7.3 2.9 3.0	1.4 Нет прироста производи- тельности труда 8

\*Authors' computation

Key:

1. Sectors of the industry
2. Labor productivity
3. Capital-labor ratio
4. Coefficients of elasticity (growth of capital-labor ratio figure per 1 percent of labor productivity, %)
5. Oil-producing
6. Gas
7. Coal
8. No growth in labor productivity

The causes of the phenomenon observed are many, since a multitude of variously oriented factors have an impact on the effectiveness of fixed capital and on the generalizing indicator of that effectiveness -- the capital-output ratio. Among these factors the natural ones must be singled out in particular. Demonstrating the impact of the natural factor on the capital-output ratio is a complex and little-developed problem. A solution to this problem would make it possible to demonstrate the impact of objective factors on the dynamics of the capital-output ratio and help to locate resources to retard the rate of its decline and to stabilize it in the fuel-extraction sectors.

Among natural factors we can distinguish: climatic features of the area of occurrence of the resources (average annual temperature, number of deposits, presence of snow cover or permafrost, etc.); conditions of occurrence of the mineral (size of the reserves, degree of concentration of their distribution, depth of occurrence, water- and gas separation, the nature of the enclosing rock, etc.); the quality of the mineral (mineral content of the reserves, presence of admixtures, and specific makeup).



The last two groups of factors are usually altered by the mining-geological ones. Certain aspects of the natural factor may be expressed by the entire cross section of indicators, but they are not all included in the statistical reporting. The indicators of the natural factor reflected in the statistics of the extraction industry may be arbitrarily divided into two groups. The first group relates to indicators that directly describe natural conditions. These are the depth of operating oil and gas wells, the average monthly output of gas wells, the average thickness and slope of coal seams, the depth of development, and the overburden coefficient. The second group relates to indicators that also simultaneously reflect the technical-economic level of the sector's development. Among these are the average monthly output of oil wells (this reflects not only the intrastratal pressure but also the method employed to maintain reservoir pressure), the water cut of oil produced, the number of wells (this describes the scale of production and the stage of production the sector is in, since with declining production it is necessary to bring in additional wells to maintain production at the previous level), mechanical drilling speed, length of mining works, relative amount of open-pit coal mining, etc. These factors do not immediately describe the natural factor, but their dynamics largely reflect changes in natural conditions.

In the past 10 years the impact of the natural factor on the effectiveness of fixed capital has considerably increased. The deterioration of the indicators that characterize the natural factor mainly affect the magnitude of fixed capital and cause an enormous growth of it, which is not accompanied by a substantial growth of production.

For example, in the coal industry the depth of development of the fields has a decisive impact on the choice of methods of stripping a coal field, technological transport systems, ventilation, water removal, and the type and density of shoring the works. With increase of depth the capital and operating costs of raising coal and rock to the surface increase, and so does the temperature of the surrounding rock. This makes it necessary to increase the amount of air delivered and to use special facilities to maintain normal working conditions, which leads to an increase in the passive part of fixed capital and is accompanied by undermining of the wall rock, and an increase in the amount of dead rock produced from the seam. Decrease in the thickness of the seams being worked makes it necessary to utilize expensive mechanized units to work seams of less than 1.2 meters, the increased cost of which usually exceeds the increase of their productivity.

In the oil-producing and gas sectors of the industry a change in the natural conditions of production also mainly affects the magnitude of fixed capital. Regression analysis has been used to show the relation of the magnitude of fixed capital to the natural factor. Regression equations for each of the fuel-extraction sectors have been constructed for two periods: I -- 1965-1975 and II -- 1976-1985. Various indicators that characterize the natural factor were sorted out for each sector. As a result the relations of change in fixed capital were determined: of the oil-producing industry on average well production, water cut of the oil produced, and the number of wells in the operating stock; in the gas industry on the production of the gas wells, and the

well depth; and in the coal industry on the average depth of the works, average seam thickness, and length of the mining works. This computation made it possible to demonstrate the change in magnitude of fixed capital for a 1 percent change in the average value of each indicator, while the value of the other indicators was fixed for various time intervals, or the coefficients of elasticity of fixed capital for these indicators

Use of the results obtained during computations (constructing generating functions and regression equations) made it possible to define the conditions of average annual rates of change of the capital-output ratio for the past 10 years due to the impact of the natural factor:

$$\Delta F_{\text{nat}} = \frac{(1 - \Delta\Phi \beta_{\Phi}) + (1 - \Delta H \beta_H)}{(1 - \Delta x_1 \beta_{x_1}) \dots (1 - \Delta x_n \beta_{x_n})} - 1,$$

where  $\Delta F_{\text{nat}}$  is the average annual change of the capital-output ratio from the impact of the natural factor,  $\Delta\Phi$  is the average annual increase of fixed capital,  $\Delta H$  is the average annual change in the number of PPP [industrial workers directly engaged in production],  $\beta_{\Phi}$  and  $\beta_H$  are the coefficients of elasticity of gross production for fixed capital and the number of industrial workers directly engaged in production,  $\Delta x_i$  is the average change of an indicator  $i$  that characterizes the natural factor,  $\beta_{x_i}$  is the coefficient of elasticity of fixed capital for an indicator  $i$ , and I and II are time intervals (1965-1975 and 1976-1985).

In the oil-producing industry the average annual rate of decline of the capital-output ratio due to the natural factor should have been 5.4 percent, but in fact it reached 7.4 percent, i.e., 2 percent of the annual decline in the capital-output ratio in the past 10 years was the result of other causes and represents a reserve for retarding the rate of decline.

One can, to some degree, neutralize even the negative impact of the natural factor itself. For example, with the present-day conversion to mechanical oil recovery, the sharp decline in well productivity does not occur. At many fields, however, including Samotlor, there was no orderly preparation for this conversion and therefore there was a considerable decline in oil recovery. Moreover, with mechanized oil recovery it is highly important to ensure proper injection of water into the bed. In the Yuganskneftegaz Association, for example, strong and organized subdivisions were set up to inject water into the bed. Virtually all the fields therefore achieved positive compensation, i.e., a guaranteed oil intake, which cannot be said of several other producing centers.

In the coal industry the annual decline in capital-output ratio should be 3.1 percent, versus an actual 4.4 percent.

The overall deterioration of the quantitative indicators that characterize the natural factor in the past 10 years as compared with the preceding 10 explains more than one-half of the actual average annual decline in capital-output

ratio in the oil-producing industry and more than one-third in the coal industry (because of the worsening conditions for underground mining).

In the industry's gas sector the quantitative indicators of the natural factor improved considerably in the past 10 years as compared with the preceding 10: gas output has sharply increased and well depth has decreased slightly. However, recovery is occurring under harsh natural and climatic conditions, in the permafrost zone, and at considerable distances from the commercial centers of the European part of the USSR. These factors are little susceptible to quantification, but the decline in capital-output ratio in this area is due to them.

Under the conditions of society's increasing demand for fuel and energy resources and the worsening conditions for their recovery we can improve the use of fixed capital and increase the return on it only by qualitatively improving it and quantitatively reducing it, i.e., by implementing intensive forms and approaches and methods of replacement.

Let us look at this in detail. As mentioned earlier, the growth rate of labor productivity has lagged considerably behind the growth rate of the capital-labor ratio. This relates mainly to the fact that the replacement of fixed capital overall has been extensive in nature, i.e., it has not so much ensured the retirement and replacement of obsolete fixed capital by wholly new capital as it has brought about a quantitative expansion (or accumulation) of it.

If we count as new the fixed capital introduced in the past five years, then the coefficient of replacement during the Ninth Five-Year Plan was 44 percent in the oil-producing industry, 65 percent in the gas industry, and 38 percent in the oil industry. During the 11th Five-Year Plan this indicator amounted to 42 percent, 54 percent, and 36 percent, respectively.

In 1985 the annual coefficients for the introduction of fixed capital amounted to 13.2 percent for oil production, 10.2 percent in the gas industry, and 8.9 percent in the coal industry. The retirement coefficients were considerably lower -- 1.1 percent, 0.6 percent, and 3.6 percent. Of interest is the coefficient of the intensive replacement of fixed capital, which shows the relation between the replacement of fixed capital and its growth in a given year. The data shown in Table 4 are evidence of the reduced proportion of newly introduced capital intended to replace retired capital in the years of the 10th and 11th five-year plans (as compared with preceding ones) for the industry as a whole as well as for the oil-producing and coal industries. In the oil-producing industry the coefficient of intensive replacement declined by a factor of 2.1 in the 11th Five-Year Plan as compared with the Ninth and in the coal industry by a factor of 1.3. Only in the gas industry did it remain at the same level.

The considerable fluctuations of the coefficient of intensive replacement for the fuel-extraction sectors (from 5.3 percent in the gas industry to 43.8 percent in the coal industry) can be partially explained by the need for additional investment to maintain recovery at the level planned or attained. In

the coal industry this investment averages about 30 percent of the initial value of fixed capital. In the oil and gas industries the additional expenditures reached 50-150 percent of the initial investment, depending on mining and geological conditions. Furthermore, for the gas industry this was a time of developing major gas fields in remote areas. In the coal industry there was a very high level of premature retirement of fixed capital. In particular, coal-mining equipment goes out of service after two to four years of operation. For example, the actual operating life of cutters in the coal industry is two years, of mechanized props, braces, loaders, and gobbing machines about three years, and of excavating units about four years. Machinery at open pits has an operating life below the norms. However, overall operating life in the coal industry has increased in recent years.

Table 4

Average Annual Coefficients of Intensive Replacement of Fixed Capital in the Industry and in the Fuel-Extraction Sectors, %

1 Отрасль промышленности	2 Пятилетки			
	3 Восьмая	4 Девятая	5 Десятая	6 Одиннадцатая
7 Промышленность в целом	19.4	18.6	16.7	17.0
8 Нефтедобывающая	14.0	18.9	12.1	9.0
9 Газовая	7.0	5.3	5.2	5.3
10 Угольная	55.3	57.8	46.4	43.8

\*Authors' computation based on study [5].

Key:

- |                            |                        |
|----------------------------|------------------------|
| 1. Sectors of the industry | 6. Eleventh            |
| 2. Five-year plans         | 7. Industry as a whole |
| 3. Eighth                  | 8. Oil-producing       |
| 4. Ninth                   | 9. Gas                 |
| 5. Tenth                   | 10. Coal               |

An approximate estimate of the average service life of fixed capital can be made on the basis of the data on the growth rates of capital and on the coefficients of its retirement [7].

The data shown in Table 5 show that the service life of fixed capital both for the whole industry and for the fuel-extraction sectors increased during the 10th and 11th five-year plans in comparison with the preceding one. In the industry average service life increased by six years, and by five years in the gas industry, and it exceeded standard service life by six years. In the coal industry it increased by four years and was two years above standard. In oil production service life barely changed, but it exceeded the standard by nearly five years.

At the existing rate of fixed capital replacement under conditions of simple reproduction (input equals retirement) average capital service life for the industry would be 71 years, 76 years in oil production, more than 100 years in the gas industry, and 26 years in the coal industry.



Table 5

# Rate of Growth and Retirement and Average Service Life of Fixed Productive Capital\*

Отрасли промышленности 1	1965—1975 гг.			1975—1985 гг.		
	средний темп прироста основных фондов, % 2	средний коэффициент выбытия, % 3	средний срок службы, годы 4	средний темп прироста основных фондов, % 5	средний коэффициент выбытия, % 6	средний срок службы, годы 7
5 Промышленность в целом	8.4	1.77	19.5	7.5	1.40	25.7
6 Нефтедобывающая	9.5	1.77	20.6	11.5	1.31	20.9
7 Газовая	18.2	1.08	17.3	14.0	0.76	22.7
8 Угольная	4.7	5.27	13.9	4.9	3.90	17.1

\*Sources -- studies [5 and 7]

## Key:

- |  |                        |
|--|------------------------|
| 1. Sectors of the industry                 | 5. Industry as a whole |
| 2. Average growth rate of fixed capital, % | 6. Oil-producing       |
| 3. Average coefficient of retirement, %    | 7. Gas                 |
| 4. Average service life, in years          | 8. Coal                |

In 1985 The proportion of fixed capital with an operating life up to five years amounted to 46.6 percent in the oil-producing sector, 47.6 percent in gas, and 38.6 percent in coal. In comparison with 1975 this proportion increased by 1.8 percent in the oil-producing industry, declined by 16.7 percent in gas, and remained at nearly the same level in coal.

The compliance of the status of fixed capital with the requirements of technical progress is also shown by the coefficient of modernization (the relation of residual cost of fixed capital to its initial cost) (Table 6).

Table 6

# Coefficients of Modernization, %\*

Отрасли промышленности 1	1970 г.	1975 г.	1980 г.	1985 г.
2 Нефтедобывающая	54	60	59	55
3 Газовая	87	93	82	69
4 Угольная	73	67	62	58

\*Authors' computation, based on study [5]

## Key:

- Sectors of the industry
- Oil-producing
- Gas
- Coal

The greatest magnitude of the coefficient of modernization occurred for the oil-producing and gas industries in 1975 (60 percent and 93 percent), and then

this indicator started to decline. In the coal industry the coefficient of modernization has been steadily declining since 1970, i.e., the deterioration of fixed capital has been increasing, which has led to additional capital repairs and unplanned downtime.

This cannot be fully met by the output of mine machine building. For example, the oil sector has a need for high-pressure pumps (200-400 atm), efficient compressor equipment, and special equipment with high resistance to corrosion. The poor quality of the Christmas trees, ETsN [electrical centrifugal pumps], pumping units, etc. that are delivered leads to over-standard downtime. On 1 January 1986 at Glavtyumenneftegaz alone there were twice as many wells out of action as assumed in standards. The subsurface repair of a single well in Western Siberia takes twice as long as the average for the USSR, and costs three times as much.

The coal industry loses 600 million rubles of output annually just from the lack of mining equipment capable of operating in narrow seams [9].

As already noted, capital-output ratio depends on the quality of equipment applied to production and on how the proportion between its cost and productivity varies. In the fuel-extraction sectors it is typical for replacement to be based on capital-intensive equipment, which leads not only to a decline in capital-output ratio but also to an increase in production costs. It is well known that with the growth of technical progress there is a growth of the organic structure of a product, but this requires a reduction in the total costs of producing it. On this basis a formula has been proposed for the rate of technical progress [8]:

$$I_{\text{tp}} = I_{\text{g}}(v) / I(c+v),$$

where  $I_{\text{tp}}$  is the rate of technical progress,  $I/v$  is the index of growth of the organic makeup of production, and  $I(c+v)$  is the index of the reduction of production costs.

The growth rate in technical progress that we have achieved in the industry and in the fuel-extraction sectors is shown in Table 7. It is obvious from Table 7 that the rate of scientific and technical progress in the 10th and 11th five-year plans slowed down in comparison to the 11th [sic], both for the industry as a whole and in the fuel-extraction sectors. In the Ninth Five-Year Plan the rate of scientific and technical progress in these sectors was higher than for the industry as a whole. An especially high rate was observed in the oil-producing sector -- 184.8 percent in 1975, relative to 1965. In 1985 the rate of scientific and technical progress fell off sharply in the fuel-extraction sectors. For example, scientific and technical progress in oil production relative to 1965 amounted to 128 percent in 1985 versus 184.8 percent in 1975, in the coal industry to 106.7 percent versus 170.7 percent in 1975, and in the gas industry to 139.4 versus 176.6. The drop in scientific and technical progress in these sectors was substantially greater than for the industry as a whole.

Table 7

Rate of Technical Progress in the Industry  
and in the Fuel-Extraction Sectors, % of 1965\*

Отрасли промышленности	1970 г.	1975 г.	1980 г.	1985 г.
1 Промышленность в целом	122,0	142,4	140,8	140,5
2 Нефтедобывающая	139,8	184,8	136,8	128,0
3 Газовая	132,1	178,6	150,0	139,4
4 Угольная	130,9	170,4	113,8	106,7

\*Source -- study [5].

Key:

1. Sectors of the industry
2. Industry as a whole
3. Oil-producing
4. Gas
5. Coal

The decline in capital-output ratio and the worsening of the operating indicators of the fuel-extraction sectors are mainly explained by the lagging rate of the scientific and technical progress that increases the operating efficiency of these sectors and on the rate of developing new fields of fuel and energy resources. In other words, at this stage the level of scientific and technical progress does not even compensate for the negative impact of the natural factor on the effectiveness of fixed capital. Only by accelerating scientific and technical progress can we slow down the rate of decline in capital-output ratio and stabilize it. The conditions for accelerating scientific and technical progress in the oil industry exist. They are increasing the productive capacity of oil field equipment and improving the technical level of it, broader use of new technology and technical means, and automation of production.

Development of the gas industry poses the problem of setting up gas fields in unique deposits of Western Siberia by constructing wells of larger diameter (more than 168 mm) that have a productivity of 1-1.5 million m<sup>3</sup> per day, and gas collecting points with a capacity of 10-15 billion m<sup>3</sup> of gas per year. Means and methods must be created to process gas with a high content of condensate, sulfur compounds, and carbonic acid, as well as deposits with low formation pressures and low temperatures. This requires the broad application of traditional and new methods of gas recovery (thermal treatment of well bottom zones, intra-formation blasting, use of ultrasound, and treatment of well bottom zones with gaseous and liquid dessicants).

Improvement in the effectiveness of coal mining is possible in practice mainly by expanding open pits and using new methods of mining both narrow seams (including underground gasification) and wide seams, as well as continuous excavation.

There must be further improvement in mine machinery products, including the development of new equipment for mining and hauling the low-calorie and high-ash coal of mines and open pits (excavators with high unit capacity, mechanized faces, and rail and vehicular rolling stock for hauling coal).

Mining equipment must be developed and rapidly adopted that is capable of operating in narrow seams and also automated means of mining coal without a constant human presence at the working faces.

In connection with the expansion of the operating front of fuel extraction in areas with extreme natural conditions, highly reliable all-weather equipment and materials must be produced that can withstand a wide range of temperature fluctuations.

A very important factor in the stabilization of capital-output ratio in the fuel-extraction sectors is improvement in pricing the products of mine machine building, so that the increased cost of these machines is matched by an increase in their productivity.

It is important for the replacement of fixed productive capital to be done on a new technical basis. New and more improved fixed capital must be introduced on time and without waiting until the obsolete items have gone out of service. Therefore, an important factor in accelerating scientific and technical progress should be to set up a retirement coefficient for fixed capital as an approved plan indicator. The magnitude of this coefficient should be defined by the range of the service life of machinery and equipment, which averages six to seven years.

Only the implementation of an array of measures to accelerate scientific and technical progress is capable of overcoming the established trend for capital-output ratio to decline in the fuel sectors and to compensate for and neutralize the impact of the natural factor on the effectiveness of fixed capital.

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## COAL MINISTER COMMENTS ON KATEK GROWTH

Moscow EKONOMICHESKOYE SOTRUDNICHESTVO STRAN-CHLENOV SEV in Russian No 3, 1987 pp 76-81

[Article by Mikhail Shchadov, USSR Minister of the Coal Industry: "KATEK: Development Prospects"]

[Text] The 27th CPSU Congress has given our country's fuel and energy complex sectors the task of providing consumers with a steady supply of all forms of energy and fuel.

Growth in power engineering during the 12th Five-Year Plan period will be characterized by maximum use of coal, reduced demand for oil, and an influx of new energy sources into the fuel and energy balance. The Basic Directions for the country's economic and social development for 1986-1990 and for the period up to 2000 call for 780-800 million t of coal to be mined in the year 1990. There is to be accelerated development of the Kuznetsk, Ekibastuz, Kansk-Achinsk and other coal basins in East Siberia and the Far East, where the substantial coal reserves and favorable mining geological conditions allow them to be mined by the advanced and economical open-pit method.

Siberia's importance to the country's economy stems primarily from its tremendous natural wealth and its fast-growing productive and scientific potential. The plans for long-term economic and social development call for the setting up of a needed fuel and energy base and energy-intensive industrial sectors in this region, and for coordinated use of mineral and raw material, forestry and other natural resources.

Construction of the facilities making up the Kansk-Achinsk Fuel-Energy Complex (KATEK) is exceptionally important to the continued development of Siberia's productive forces and to the entire country's fuel and energy base.

The Kansk-Achinsk Basin occupies an area of about 60,000 square km, extending in a latitudinal direction along the Trans-Siberian Railroad for almost 800 km. The basin's geological reserves have been estimated at 600 billion t, of which 140 billion t are suitable for open-pit mining. Some 24 coal fields have been discovered in the basin. Of them, the Berezovskiy, Uryupskiy, Barandatskiy, Itatskiy, Nazarovskiy, Irsha-Borodinskiy, Abanskiy and others are of the greatest commercial value. Within these fields, the primary

deposit is represented by a seam of 33-70 m in thickness. The basin's potential resources will allow the mining of over 200 million t of coal per year over the next 20 years.

The basin's large lignite reserves and the mining geological conditions which make open-pit working feasible, make it possible to construct open pit mines having an output capacity of 40-60 million t of coal per year.

The Kansk Achinsk coals are production-type fuels and can be used not only for burning, but can also be chemically processed to produce thermal coal as well as liquid and gas fuels.

The USSR's long-term power-production program calls for the following main directions for KATEK coal use: to generate electric power at Siberia's TES's [thermal electric power stations], as well as at the new KATEK GRES's [state regional electric power stations], which have a unit capacity of 6.4 million kW each, and which will be sited near the coal pits; to produce synthetic liquid fuel and other valuable chemical products (in this field, brown coal is competitive with petroleum and its refined by-products) to produce the enriched solid high-energy fuel for Siberia's and other regions' needs which are replacing bituminous steam coals.

The KATEK projects now being built consist of high capacity coal pits, GRES's, high-tension power transmission lines of up to 1,150 kV, new modern enterprises for producing enriched solid and liquid synthetic fuel, gas and valuable chemical products, the Krasnoyarsk Heavy-Duty Excavator Plant, and new cities. KATEK ranks with such huge construction projects of our country as the BAM [Baykal-Amur Railroad] and KamAZ [Kama Motor Vehicle Works].

The KATEK nucleus will consist of its power engineering facilities. Each of the GRES's under construction will have capacities equalling those of the Sayano-Shushenskaya hydroelectric power stations. One of these GRES's can generate as much electric power as both the Krasnoyarskaya and the Sayano-Shushenskaya power stations together. KATEK is turning into a large scale power production base, the significance of which extends beyond Siberia.

The construction of the KATEK facilities, the setting up of the miners' and power workers' cities, the development and operation of unique new generation equipment and the widespread introduction of electronic computers and control equipment all basically represent an independent program.

Five ministries have been assigned the construction work. The first stage in the large-scale urban development program is being realized today. The city of Chernenko, which will have a population of over 150,000 people, and which will be the site of industrial enterprises, will be the future KATEK administrative and cultural center. USSR Minugileprom [Ministry of the Coal Industry] has been given the largest tasks. Over the next 15-20 years our industries must implement a vast program aimed at completing construction of the Berezov No 1 Coal Pit, the productive capacity of which will be 55 million t of coal per year, reconstructing the Nazarov Coal Pit, with its output of 14 million t per year, putting the Borodin No 2 Coal Pit (annual output: 40 million t), the Uryup Coal Pit (53 million t per year), the Itatskiy No 1 (60 million t per

year) and the Itatskiy No 2 (annual output: 50 million t per year), into operation. It should take a total of 20 years to put almost 200 million t of mining output capacity into operation, which is 4.5-fold greater than that of the entire 35-year history of this basin's development.

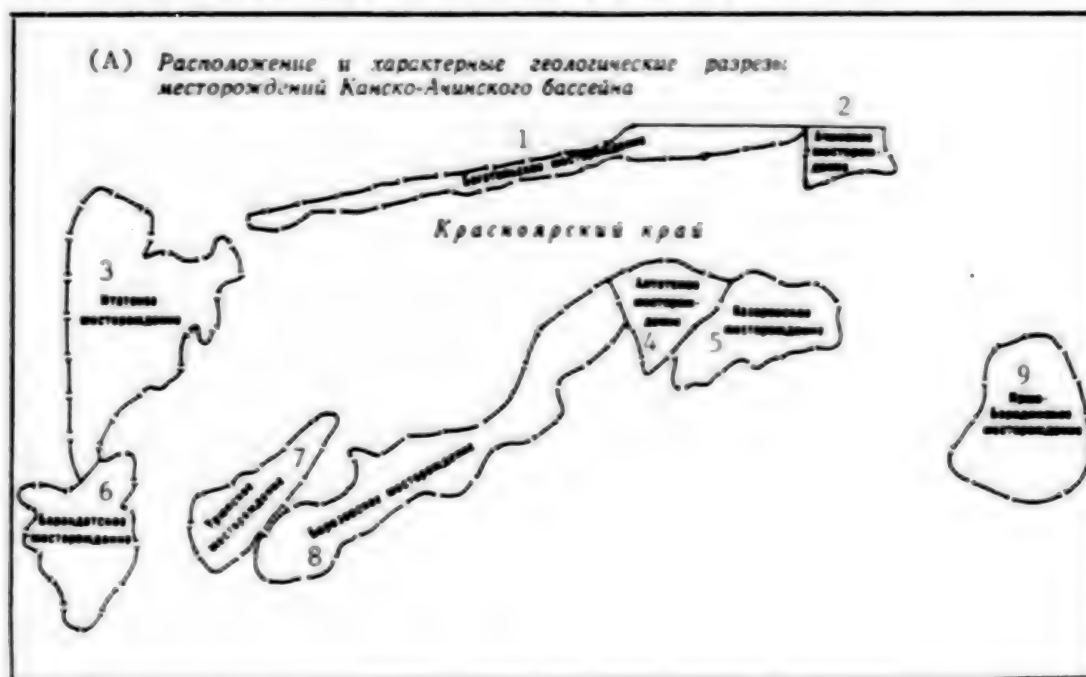


Diagram key: (A) Situation and Characteristic Geological Sections of the Kansk-Achinsk Basin Coal Fields;

- |                      |                         |
|----------------------|-------------------------|
| 1--Bogotol Field     | 6--Parandatskiy Field   |
| 2--Achinsk Field     | 7--Uryupskiy Field      |
| 3--Itatskiy Field    | 8--Berezov Field        |
| 4--Yumatovskiy Field | 9--Irsha-Borodino Field |
| 5--Nazarov Field     |                         |

During the 10th and 11th five-year plan periods, a great deal of geological exploration and engineering work was done and a feasibility study was drawn up concerning the working parameters of the new generation mining and transport equipment for the priority KATEK coal pits. New projects are being planned and individual machines and mechanisms are being manufactured and delivered.

At present the priority project is Berezovskiy Coal Pit No 1. Plans call for the first phase of this coal pit, which will have an output of 27 million t per year, to start operating in 1988. The coal pit is slated to reach its full design output during the 13th Five-Year Plan period. The pit's mining transport and disposal system will use ERP-5250 wheel excavators, PKZ-5260/65 face conveyers, PM-5250 85/40 interbench reloaders and OSh-5250/190 spreaders.

The ERP-5250 convertible wheel excavator, with its reduced working parameters and increased cutting power (up to 14 kg/s<sup>2</sup> and), built by the Novo-Kramatorsk Machine-Building Plant imeni V. I. Lenin is designed for use in the harsh Siberian climate within a temperature range of +35 degrees to -40 degrees, and



can handle blasted solid overburden rocks imbedded with chunks up to 500-600 mm. The OShR-5250/190 spreader can also operate in these conditions.

Two conveyer lines will be built to deliver the coal from the pit to GRES-1. Each consists of 6 conveyers with delivery capacities of 4,000 t/hour (belt width is 1,600 mm, speed is 4.5 m/second). Similar technological layouts will be used in other prospective KATEK coal pits as well.

Considering the specific nature of the mining geological conditions of the basin's fields and the opportunities for the country's machine-building plants to construct powerful mining and transport equipment, a number of coal pits may use differing technological layouts. In individual instances, a cyclical flow layout or a cyclical production layout calling for heavy-duty power shovels could be used in tandem with a flow production layout.

KATEK's specific hydrotechnical conditions and planned production volumes require that the most progressive scientific and technical resolutions at the disposal of the USSR and the other CEMA member-nations be used at every stage of this region's development. For example, for years the GDR has been accumulating experience in devising and using wheel and ladder-type excavators. Every year GDR coal pits strip 1.3 billion cubic m in overburden using multibucket excavators. According to the specifications developed by Ukrniiprojekt [Ukrainian State Scientific Research, and Planning and Design Institute of the Coal Industry], the GDR's Takraf People's Enterprise is manufacturing special wheel excavator complexes for KATEK coal pits, both those being built and those being renovated. The first models of this equipment have already begun arriving in the Soviet Union.

The operating Nazarov Coal Pit, where the two independent Achinsk and Chulym sections are being erected, is being reconstructed. A transport and disposal equipment complex consisting of an ARs (k)-4000 wheel excavator and an ARs (k)-880.195 spreader, of GDR manufacture, have been accepted for use as basic stripping equipment at the Achinsk section. The coal will be mined with ERP-1250 wheel excavators and EKG-4u truck-mounted power shovels working in tandem with rail transport. A combination mining system will be used at the Chulym section: a transport system (EKG-8I power shovels in tandem with rail transport) on the upper horizons, and a transport-free system on the lower horizons, consisting of ESh-20/90 and ESh-100/100 draglines. The coal will be mined with ERP-1250 wheel excavators and with rail transport.

The conditions in the basin's coal pits permit the use of equipment of great unit power. During the 10th Five-Year Plan period, the Nazarov Coal Pit put the most powerful dragline in the USSR into operation (the ESh-100/100, with a boom length of 100 m, a shovel capacity of 100 cubic m and an annual output of up to 15 million cubic m). The ESh-100/100 power shovel has a radically new hydraulic travelling mechanism which keeps the support base completely off the ground, and is equipped with powerful traction and hoist mechanisms. This machine incorporates 15 percent less metal per unit than the ESh-25/100 power shovel. Putting the ESh-100/100 excavator into operations has boosted the Nazarov Coal Pit's annual coal output by 2 million t.

It takes belt conveyers to transport the huge volumes of mined materials. Conveyers with supporting roller-bearing idlers and cable-inlaid rubber belts operate most efficiently in KATEK coal pits. Belts encased in thicker rubber are needed to carry the rocks and coals with their large-sized inclusions; this evens out the impact loads, extending the belts' service life.

The main problem is the operational reliability of individual machines and of the complex as a whole. The use of wheel excavators in KATEK coal pits is complicated by the presence of solid inclusions in the overburden rocks. The use of continuously operating machines to mine bituminous coals containing solid rock intercalations has been mastered in the Ekibastuz Basin. The NRB [People's Republic of Bulgaria], the GDR, the CSSR and other countries also have a great deal of experience in this practice. Based on foreign and domestic experience, the State Scientific Research and Planning and Design Institute of the Coal Industry (Ukrniiprojekt) designed a wheel excavator tool for excavating rocks with solid inclusions as well as a device which prevents bulky chunks of rock from getting onto the conveyor channel.

The large-scale introduction of scientific achievements into, and the securing of a high technical level for production has particular importance with regard to finding correct solutions to the problems of intensifying the production processes, and increasing labor productivity.

A number of USSR Minugleprom scientific research institutes have consolidated their efforts for the purpose of studying the various aspects involved in developing KATEK coal pits. During the 11th Five-Year Plan period, they carried out a number of scientific research and development efforts aimed at devising new techniques and at substantiating highly effective schemes for conducting stripping and mining operations.

Thus the IGD [Institute for Mining Affairs] imeni A. A. Skochinskiy and Ukrniiprojekt, along with Gipproshakht [State Planning Institute for Mine Construction] and Sibgrproshakht [Siberian Planning Institute for Mine Construction] developed a scheme to use flow-type production methods in stripping and mining work at Berezov Coal Pit No 1. At the Borodino Coal Pit, an improved scheme for mining coal and for wheel excavator placement has been introduced, the result of which is more effective excavator use and a reduced number of power shovels. The ERShRD-5000 wheel excavators developed by the IGD imeni A. A. Skochinskiy and Ukrniiprojekt are being used successfully at KATEK coal pits.

Ukrniiprojekt has developed specifications for production methods using continuously-operating equipment, which methods have been used in Sibgiproshakht and Vostsibgiproshakht [East Siberia Planning Institute for Mine Construction] projects, and will be used at prospective Kansk-Achinsk Basin coal pits such as the Borodino No 2, the Uryup and the Berezovskiy No 1 (2nd phase). In accordance with recommendations made by KATEKNIIugol [Kansk Achinsk Fuel-Energy Complex Scientific Research Institute for Coal], effective schemes for dumping rocks into worked-out gobs have been introduced, as have rational schemes for drilling and blasting work.

A variety of systems are presently in operation for the purpose of coordinating all the scientific research related to the development of KATEK. The goal-oriented integrated scientific and technical program developed by USSR GKNT [State Committee for Science and Technology], the USSR Academy of Sciences and USSR Gosplan, which includes a number of partial programs, is particularly important.

There are many different fields of application for Kansk-Achinsk coals. Their distinguishing characteristics--the large amount of volatile matter in the organic mass, and their capacity for thermal breakdown with accompanying formation of semicoke and calcium in their mineral fractions--tend to determine the basic directions in the search for ways to process these coals. Coal-processing methods related to power generation are most acceptable for use in the Basin. The KATEK power stations, starting with the third, will be erected as power-production combines producing inexpensive electric power through the high-speed pyrolysis of synthetic and boiler fuel.

A great deal of improvement is possible as regards the quality of resins and of increasing the amount of motor fuels and clean gaseous fuels derived from them and used in the electric power generating combines' power blocks. Specialized industrial enterprises have concluded that the light resin from the Kansk-Achinsk coals can be used as a totally satisfactory raw material for producing gasoline, oils and phenols by using equipment developed by industry.

The brown Kansk-Achinsk Basin coals can also be used effectively as lump industrial and smokeless fuel. The semicokes produced in the power production process, and mixed with heavy brown coal resin fractions, are subjected to caking. As calculations have shown, this process derives an economic effect of from 4.1 to 7.4 rubles per ton, depending on the purpose for which the lump fuel is intended and the region in which it is used.

The feasibility of using semicoke as fuel for modern hot-water heaters without substantially altering them has been confirmed by an experiment in which semicoke derived from Kansk-Achinsk coal was burned industrially at the Yegorshinskaya GRES and the Krasnoyarskaya TETs-1. Semicoke's physical and chemical properties allow it to be burned reliably and effectively in steam generator fire boxes.

Industrial experiments have confirmed that the semicoke produced through high-speed pyrolysis of brown coals can be used with good results as a charge component in the production of coke and as a coke substitute when blowing-in blast furnace hearths.

In addition to the Kansk-Achinsk Basin's coal fields with their reserves, there are extensive coal-producing areas with in-place resources and predicted reserves, some of which, located near industrial enterprises, can be used to produce power generating fuel.

Subterranean gasification of these coals can be carried out for the purpose of converting them directly underground into fuel gas, which is a most convenient and ecologically clean fuel. The production of gas from coals right at the deposit is one of the methods used in progressive geotechnology wherein solid

fuel is converted into a gaseous fuel, brought up to the surface and, after it has been cleaned and cooled at the industrial area, transported 20-30 km through gas pipelines to the consumer.

The gasification of natural bituminous coal or lignite semicoke by heated steam produces a blend of carbon monoxide and hydrogen with minimal amounts of hydrocarbons and inert constituents (carbon dioxide and atmospheric nitrogen). This blend is characterized by high combustion temperature and can be used as fuel for high-temperature industrial processes.

The use of these mixtures as reducing agents in the metallurgical industry, or for use in synthesizing artificial liquid fuel, ammonia, methanol and other compounds is equally promising.

These days, an ever-increasing amount of attention is being accorded questions related to environmental protection and the ensuring of a favorable ecological status for all the territory of the country, particularly for those regions having an intensively developing mining industry.

The KATEK ecological program provides for a number of measures aimed at conserving and reproducing natural resources. In this connection, a great deal of importance has been accorded the cleaning of stagnant process water and its subsequent use for a service water supply. Prior to being disposed of into the waterworks, all the water is purified, usually mechanically, and often by physical and chemical methods.

Another of the KATEK ecological program's measures is that of restoring land disturbed by open-pit mining operations. Recultivation has been going on in the Basin's coal pits since 1972. It includes the basic technological work of grading the dumps with bulldozers, removing soils and soil forming rocks with power shovels and hauling them away with dump trucks to the surfaces of restored dumps and levelling out the recultivated soils. A technique for disposing of overburden rocks in worked-out gobs has been developed to help restore disturbed land. Disturbed lands are now being successfully restored at the Borodino Coal Pit. Recultivated lands are usually turned over for the raising of agricultural crops. The yield in grain crops in these land areas amounts to 18 quintals per hectare, i.e. is on a par with regional levels. An average of R4,900/hectare is spent on land recultivation.

The establishment of KATEK is associated with the solution of totally new and complicated technical problems. The most advanced and economical solutions will be used here, as will advanced experience and the latest achievements of science and technology.

In order to accelerate growth in the productive potential and the development of the natural resources in the country's eastern districts, provision has already been made for putting the Berezovskaya GRES's power blocks into operation during the 12th Five-Year Plan along with the coal mining capacity of Berezov Coal Pit No 1. Plans also call for construction to begin on Borodino Coal Pit No 2, and on the work of setting up the Kansk-Achinsk Territorial Industrial Complex.



CEMA member-nations are also helping to develop the Kansk-Achinsk Basin's development. Wheel and ladder-type excavator complexes of GDR make are to be used extensively at KATEK coal pits. The USSR, in developing new generation wheel excavators, will be making widespread use of the experience accumulated in the People's Republic of Bulgaria, the GDR and the CSSR in developing and operating these machines.

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## COAL QUALITY IMPROVEMENT RAISES THERMAL EFFICIENCY

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[Article by V. Belyaev, chief, UkSSR Minenergo Technical Administration, A. Reshetnyak, candidate of economic sciences and A. Tuzman, lecturer: "Improving Coal Quality as a Factor in Improving Heat and Power Engineering Efficiency"]

[Text] In accordance with the decisions of the 27th CPSU Congress, growth in the country's fuel and energy complex must be subordinated to the task of stably meeting the national economy's needs for all types of fuel and energy by recovering and producing them in greater quantities while systematically implementing a goal-oriented energy conservation policy in all national economic sectors and spheres. This entails moving the problem of intensifying coal fuel production to the forefront while raising production volumes without increasing the number of subsurface mines and coal pits, and by more completely extracting all coal seams in a given mine field, reducing the amount of coal lost in the mining process and reducing the amount of fuel mass lost in the enrichment wastes. It is the latter which predetermines increases in the amount of electric power and heat produced from each ton of coal (raw mined materials).

Intensified use of our fuel reserves has an organic relation to improvements in their quality, and this is characterized primarily by such indicators as ash and moisture content, which in the final analysis determine the fuel's heat value. In terms of these indicators, consumers' requirements and their demands for quality in the produced resources must influence recovery methods, particularly on coal processing, as it is the final process in producing commodity output prior to its immediate use. In this connection, the coal should be of such quality as will ensure the maximum production of electric power and heat at a minimum of aggregate outlays throughout the entire reproductive cycle. Moreover, the qualitative aspects of effectiveness are related to the social results of production work. These consist in environmental protection, improved working conditions etc. Thus, rational consumption of fuel resources must be defined and satisfied with consideration given to achieving, in these conditions, the maximum possible economic effect at all the stages at which the fuel and energy complex functions.

For the last 15 years, heat and power engineering in the UkSSR has been characterized by headlong growth in the demand for such progressive types of fuel as mazut and natural gas, a demand which does not correspond to the amount of these fuels recovered in the republic, and which has been accompanied by a substantial reduction in the relative share held by coal. In 1985, the structure of fuels used by UkSSR Minenergo [Ministry of Power and Electrification] in conventional calculations came to: mazut--30.7 percent; natural gas--30.1 percent; coal--38.5 percent. The last decade has seen a worsening in the quality of the fuel coal sent to thermal electric power stations. This stems from deliveries of high-ash run-of-mine coals and unenriched screenings (culm), as well as from an increase by-products from the coal-enrichment sector, such as intermediate products and coal slacks. According to reports from thermal electric power stations, the coal's ash content (by dry weight) increased from 29.8 percent in 1975 to 38.6 percent in 1985, and this was accompanied by a fall in heat value from 4,844 to 4,137 kilocalories per kg (kcal/kg), or 14.6 percent. This led to a disparity in the quality of the fuel coal actually used and its rated characteristics. Plans called for the use of coal with an ash content of from 17 to 22 percent and a heat value within 5,800-6,600 kcal/kg. The calorific value of many power stations comes to 3,580-3,640 kcal/kg, which is lower than the projected level by a factor of 1.6-1.8. This pertains primarily to the Starobeshevskaya, Voroshilovgradskaya, Zaporozhskaya, Ladyzhinskaya and Uglegorskaya GRES'.

The primary causes of poorer coal quality are the higher ash content of the coals mined where there is a lag in putting enrichment facilities into operation. The increased ash content of this coal stems from the mass changeover of the mines to wholesale coal mining and bringing it up to the surface in mass, i.e. impoverished form, with a great deal of wall rocks. These mining methods have allowed us to solve a number of important problems in the coal industry, such as using highly-productive mining and subsurface transport equipment efficiently and increasing the load at the breakage face. In the final analysis, labor productivity has been substantially increased at the comprehensively mechanized faces and prime mining costs have been reduced. The problem of mine safety has been solved and heavy manual labor has been eliminated in the most dangerous process of direct coal mining. The transition to these production methods assumed that the coal ore will be mechanically enriched at the next stage in coal production, thus eliminating its negative effects and providing the consumer with conditioned fuel. The enrichment of coals through extensive use of complex mechanization of the coal-mining process and continued raising of the technical level of our coal consuming industries is also a mandatory stage for the coals used in power engineering, since about a third of the coal mined is used to produce electrical and thermal energy. The increased fouling of mined coals with rocks from mine workings and repairs of mine workings has necessitated a corresponding increase in enrichment volumes by constructing new mills, by retooling operating enterprises and using processes and devices which allow us to produce enriched coal of the prescribed quality.

Poorer coal quality is not an unavoidable result of having introduced progressive gross coal-mining methods using coal-mining complexes. It could have been avoided by putting new enrichment facilities into operation. However, construction of new enrichment mills has been postponed throughout

many five-year plan periods, and no solution has been found to the problems of devising more up-to-date methods for enriching coals, particularly fine grades. Moreover, the previously built concentrating mills were not designed to enrich coals for thermal power engineering, since often they were incapable of enriching or drying screenings and culms. Enrichment by-products (intermediate products and slimes), known for their high ash and moisture content and calorific values of 3,300-3,500 kcal/kg, cannot be used for anything else and ever greater amounts of them are being sent to GRES's [state regional electric power stations] to be burned in powdered form. Thus, in 1985 deliveries of these products comprised 20.7 percent of the overall volume of solid fuels delivered to UkSSR Minenergo facilities.

At the present time, UkSSR Minugleprom [Ministry of the Coal Industry] has 49 coal enrichment enterprises treating the coals used for power engineering needs. Only 71 percent of this coal is being enriched. Some 4.6 million t of coal screenings, over 11 million t of anthracite culms and 8.5 million t of run-of-mine coals have not been enriched. Most of this fuel is being sent to thermal electric power stations to be burned as coal-dust. The rated capacity of the mills which concentrate coal for power engineering purposes was exceeded by 47.8 percent in 1985.

The increase in enrichment of coking coals and certain grades of power production coals used in other sectors has been accompanied by increased deliveries of intermediate products and slime to power stations. This presents a contradiction: increasing the amount coals which are enriched lowers the quality of the fuel coals delivered to the power stations. The upshot is that the national economy overall suffers substantial losses.

The measures taken by UkSSR Minugleprom made it possible, starting in 1983, to only partially stop the further lowering of coal quality. This was achieved primarily by appropriate retooling and converting the Yanovskaya and Sovetskaya enrichment mills to enriching high ash-content anthracite culms, and the Mayak Mill to lean coal enrichment. However, the production capacities of these enterprises are clearly not up to solving the problem of improving overall coal quality.

The worsening of coal quality has caused a great deal of economic harm in the heat and electric power producing sector, and this harms the entire national economy. This harm comes primarily from the reductions in the actually usable capacities of power blocks and power stations overall, in the increase in specific (and consequently general) fuel consumption per unit of generated electric power, in the need to burn huge quantities of furnace fuel oil and natural gas, in reductions in the electric power supplied to consumers because of losses in installed capacity, increased consumption for in-house needs, increases in the time boilers are shut down for repairs and in additional outlays needed for emergency restoration work, for environmental protection measures and for ash removal.

An increase in the ash content of coal reduces the rated load of power blocks. This reduction (or loss of installed capacity) comes to 15-20 percent of the rated capacity depending on the power block's unit capacity and how far the quality of the coal being burned has been reduced. The extent of the economic



harm caused by this factor can be determined by the long-run marginal costs [zamykayushchiye zatraty] for putting replacement power engineering capacities into operation, which in the European USSR come to R55 per kW of installed capacity. Moreover it is necessary, when operating power systems on low quality fuel, to have reserve capacity so that power loads can be carried and a reliable power supply provided. UkSSR Minenergo power stations need, because of present coal quality, to have 1.2 million kW of reserve capacity because of the approximately 15 percent portion of unsupplied power which this causes.

The way to intensify power engineering production is by increasing the amount of electric power generated at our existing capacities from each unit weight of fuel. Reducing losses of installed capacity and proportionate fuel consumption will help solve this problem. This could be one way to economize on fuel and energy resources, which is the primary condition for improving production efficiency and balance in the national economy's consumption of its existing resources.

Most losses in installed capacity occur at blocked power stations. Power blocks equipped with obsolete and uneconomical equipment with high fuel consumption rates--450-500 grams per kW/hour and even as much as 660 grams per kW/hour, are brought in to make up for these losses. Based on the fact that the average specific consumption rate of the fuel substituted for the heat engineering equipment exceeds 102 grams per kW/hour, this causes overconsumption of coal in the republic amounting to some 600,000 t of standard fuel. Moreover, the use of low-rank coals is causing specific fuel consumption to increase at basic electric power stations, since these indicators are directly related. A 1 percent increase in the ash content of the working fuel leads to a 2.6 gram per kW/hour increase in fuel consumption, which at the Starobeshevskaya GRES, for example, raises coal consumption by 50,000 t per year.

Lowered coal quality causes reduced heat values which, in turn predetermines increased mazut and natural gas consumption. This is explained by the fact that a high temperature level is required to support the combustion process and create normal conditions for liquid slag removal. This temperature cannot be reached with high-ash and low heat-value coals. That is why, when burning coal with a heat value of less than 5,200 kcal/kg the boilers require that the burner flame be "intensified" with fuel oil, i.e., that two types of fuel be burned together. The lower the coal's heat value, the more fuel oil is burned. What's more, fuel oil compensates for the shortage in coal dust, since the coal pulverization system's equipment exhausts its existing reserves of grinding productivity right when the poorer coal quality causes increased coal dust consumption. The share of fuel oil in the fuel balance of most of the UkSSR's power stations has increased, and its overall yearly consumption in the coal-dust fed power blocks is in excess of the planned level, amounting to 4.5 million t of standard fuel.

We know that the cost of recovering and transporting oil and its derivative products to the country's western regions continues to rise. At present, most oil is refined into fuel oil, which is used primarily as boiler fuel. It could have been replaced in coal-dust fired power blocks by fuel coal and

freed for use in producing motor fuel, oils and other petrochemical products. This has also been called for in the USSR Energy Program, which emphasizes a change toward increasing coal's share in the fuel and energy balance and substantially cutting back on using oil and oil products as boiler fuel, with the same planned for natural gas in the future. This stems not only from increases in our internal demand, but from foreign trade ties as well. The demand for petroleum is universal in character, and it is a valuable raw material for the chemical industry. This is why our national interests dictate the need to use it sparingly and rationally.

The use of low-rank coals in thermal electric power stations causes boiler and transport equipment to wear out faster. This is due to the increased physical volume of the fuel and its greater abrasiveness. Downtime for the power blocks is increasing as are, correspondingly, shortfalls in the electric power supplied to consumers. The worsening in coal quality is causing additional outlays for transport and excessive loading of railroad transport. The hauling of additional ballast, caused by the increased ash and moisture content of these coals, requires additional rolling stock. It has become extremely difficult to unload the railcars filled with water-logged fuel which show up at the power stations.

The environment is being severely damaged. The increased discharges of ash, sulfur and nitrogen oxide which come from the greater ash content in the coal, cause additional pollution of the atmosphere and the arable lands around power station sites. This reduces crop yields and is harmful to human health. Elimination of these negative effects entails additional outlays to acquire and modernize ash-trapping equipment and using good farmlands to increase the capacity of ash dumps.

The use of low-rank coal is complicated by the instability of its qualitative characteristics, which stems from the power stations' lack of the equipment needed to blend the charge of various-grade fuels shipped in from different suppliers. This causes increased furnace losses and difficulties which directly effect the capacities, reliability and economy of operation of the power blocks. Moreover, the national economy is hurt by the lowered frequency of the electric power sent to clients, which is caused by losses of installed capacity, which stems in turn from using poor quality fuel.

The problem of using low-rank coal can be solved, or at least diminished, by enriching more of the power engineering coal shipped to our thermal electric power stations. This will eliminate the above-mentioned harm to the national economy. The advisability and effectiveness of this approach has been corroborated by research done by the UkSSR Academy of Sciences' Institute for Industrial Economics.

In evaluating the effectiveness of putting new coal-enrichment capacities into operation, we have used as criteria the least amount of calculated outlays (plus interest), additional calculated capital outlays and current outlays for coal enrichment. In this case, enriching the coals used in power engineering has a great influence on the indicators for producing electric power as a finished product of the fuel and energy complex.

The capital investments needed to set up new coal-enrichment capacities can be reduced by using simplified coal-enrichment equipment designs, intended for coal-dust-fired operation. Here, the technology and design for the coal enrichment equipment must provide for the removal of extremely high ash content (over 80 percent) rock fractions, for the production of a single end product, and for complete elimination of intermediate products and slime.

The standard for optimal enrichment of power-engineering coal must call for maximalization of electric power production and for burning every weight unit of fuel by choosing a rational enrichment regime. This approach takes the interests of the national economy into account, since it provides for intensive growth in the power engineering industry with no concomitant increase in coal mining, and calls for the use of existing power-production capacities. On a practical basis, this will come about by using a two-product enrichment design and by increasing the demarcation density of the coal classification, which must be established by a rating method based on the coal's physical and chemical properties, its mineralogical composition and the conditions in which it will be burned relative to the unit capacity of the power block and the distance it is transported. Losses of the fuel stock in the enrichment process are unavoidable in any separation process, and will be minimized with this process.

The problem of coal grading also deserves attention. The ash content claimed in the coal enterprises' shipping documents and in the sectorial statistical report forms have often been lowered and do not reflect their actual values. By the way, this has greatly hindered the development of coal enrichment, since the planning agencies have allocated no capital outlays for construction of enrichment mills for coals having an ash content of up to 30 percent, as indicated in the reports on the quality of the shipped coals. Coal grading must be done only once, and by an extradepartmental agency. Centralizing the testing and sampling process will cut back on the overall cost of grading and make the quality indicators more trustworthy.

Another alternative for solving the problem of using low-rank coals in the republic's heat power engineering sector which has been under consideration is that of renovating our operating power stations. A study of this trend has shown that in the absence of technical resolutions to the problem of using low-rank coals efficiently in heavy-duty power engineering boilers, especially as concerns the low-reaction anthracite fuel which comprises a great deal of UkSSR Minenergo's overall resources, and in view of the plans to renovate the Starobeshevskaya, Voroshilovgradskaya and Zmiyevskaya GRES's, only those measures are contemplated which call for partial improvement of the unloading procedure, processing the coal in the fuel storage facilities and further drying of those coals having a high moisture content, protection of the equipment tools from abrasive wear, improvement of the output and removal of slags and reduction of discharges of harmful substances into the atmosphere.

Comparative calculations have shown that these measures would not do enough to solve the problems of increasing the operating capacity of the power blocks, reducing mazut consumption and improving the equipment operation and repair routine. Moreover, the new boilers which burn low-reaction, high-ash fuel

will incorporate a great deal of metal per unit, but the main thing is that they will have other dimensions which will make it possible to use the power stations' existing production floor area. A feasibility study made by Atomteploelektroproyekt's Kharkov Division shows that the fuel and electric power consumed by the power stations for their own needs will increase following renovation. It follows from this that despite the massive capital outlays for renovating existing power stations, the economic harm caused from burning low-rank coals cannot be erased.

Thus, we cannot use renovation of our GRES's as a means to solving the problem of using poor-quality fuel, since it does so little to reduce the harm done to the national economy, and mainly does so little to free furnace fuel oil for other uses. Moreover, radical reconstruction of GRES's is connected to the protracted length of time needed to develop boilers of new design. Nor is the ecological problem being resolved. We need to consider as well the fact that nuclear power stations will be bearing the republic's primary power-production burden in the years ahead, and that heat and electric power station power blocks will have to operate on a maneuverable schedule, where loads change from 100 percent to 30 percent, and this can be ensured only where the coal is up to the projected quality.

The cardinal solution to the problem of improving heat and power engineering in the republic, improving the reliability of the national economy's power supply and making more rational use of our fuel and energy resources can be secured only by building new enrichment mills and renovating those now operating. Considering the high efficiency associated with the use of enriched coals at heat and electric power stations, we think 3-4 enrichment mills should be built in the Donetsk Basin. The capital investments for these mills will be paid back by the fuel oil which will not be needed to intensify the fire which burns high ash-content coal, and will increase the yield of electric power to the consumers by making more complete use of existing power engineering capacities.

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## EQUIPMENT MODERNIZATION PLANNED FOR MINSK CYCLE PLANT

Minsk NARODNOYE KHOZYAYSTVO BELORUSSII in Russian No 12, Dec 86 pp 10-12

[Article by K. Ustymchuk, director of the Minsk Motorcycle and Bicycle Works: "Embodying Intentions in Work": first paragraph is source introduction]

[Excerpts] The Minsk Motorcycle and Bicycle Works is one of the first in the country to master the production of machine tools and automatic lines using its own resources. The products of the machine-tool building shop are not only finding widespread use in the works, they are also being delivered to other enterprises of the branch and to foreign countries.

It is not without pride that I will point out that my own motorcycle and bicycle plant -- one of the oldest enterprises in Minsk -- has been noticeably rejuvenated and technically updated during recent times. A collective has taken shape at our plant which is attuned to great work and achievements. It achieves high production indicators from year to year. The bicycles and motorcycles with the stork emblem, which are produced in the works, can be seen not only in all corners of the USSR but also in Cuba, Vietnam, Argentina, England and other countries of the world.

We have achieved a great deal by technically re-equipping our plant, improving production technology and organization, and introducing the latest equipment at work positions. A significant percentage of the labor of the workers, engineers and designers in the machine-tool building shop and the department of the chief product engineer and other specialists is reflected in this. In a short period, they prepared a set of unique equipment, with which the leading subunits of the plant were equipped.

Today, you walk about the enterprise and see that the new equipment is winning more and more solid positions. You are convinced with your own eyes that the increase in the technical level of production is being carried out everywhere by incorporating the special unit, semiautomatic and automatic equipment, which has been made by the hands of our machine-tool builders, at the work positions.

Automatic machine tools, robotic lines, and other equipment have freed more than a dozen working hands from difficult and dangerous work. A large number of operations in manufacturing and handling items in the frame, machine,

press, assembling, and other shops are being performed with their help. Such complicated operations as the welding and soldering of frames, the manufacturing of motorcycle rims, and the thermal treatment of items and assemblies have been placed on the shoulders of the machines. The introduction of new modern equipment with the plant's brand has not only significantly raised the technical level of production but it has also improved working conditions and raised production standards. Today, in the plant, more than 1,500 motorcycle and bicycle builders have model work positions, and 14 shops have earned the title of a "Collective of High Production Standards."

Even some six-seven years ago, the enterprise had a high fever. Plans were not always fulfilled, and some deliveries in accordance with contracts fell through. It could not manage without unsatisfactory equipment claims against its products. At the beginning of the 11th Five-Year Plan, the plant's collective did not have clear growth prospects: The capacities of the enterprise were at their limit. The coefficient of their use exceeded all norms, and the machine-tool pool had grown obsolete. The employees of the branch institute, to whom we turned for help, saw the only way out to lie in the need to expand the production area -- actually to build another plant. This would have cost at the most almost 50 million rubles.

At the time, they also decided to expand our own production of the required machine tools. They adapted the section for manufacturing non-standard equipment to these purposes and established a specialized machine-tool building bureau. People, who were thinkers, researchers and true innovators, were quickly picked for work in the shop.

During the years of the 11th Five-Year Plan, almost 300 machine tools were manufactured in the shop. In addition, the builders of the unique equipment undertook in individual cases the overhaul of old units, which were returned to production equipped with automatic equipment, mechanical arms and conveying devices after having visited the machine-tool shop. This thorough strengthening of the technical base permitted labor productivity to be raised significantly and the production of motorcycles and bicycles to be increased sharply. The main thing, however, was that our own machine-tool building helped to accelerate the rates of updating and re-equipping production with new equipment manyfold.

I will note that they are practically not making any narrowly specialized equipment in machine-tool building plants of the branch now. Ordering it in accordance with individual diagrams is always bothersome and one waits a long time for the order to be filled. They usually make it using cumbersome universal machine tools without considering the specific nature of our production. It is necessary to perform more than a hundred small operations when manufacturing a bicycle, that is, compact and handy machine tools are needed which would permit the useful area of the shops to be used even more rationally. Our own machine-tool building has the capability of reacting more effectively and beneficially to the needs of production. The main winner, of course, is the purchaser of our plant's products. The plant's high level of

technical equipment provides an opportunity to update motorcycle and bicycle models more frequently and to improve their quality in a planned manner.

Now, when the party has assigned the task of achieving a considerable acceleration in economic development rates based on scientific and technical progress, we are placing the main stress on thoroughly updating and using new equipment. It is important for us to display at all levels an approach that would insure the achievement of high production indicators with the least amount of expenditures. To do this, we have mobilized to the maximum the machine-tool building shop collective for the manufacturing of batches of new automatic machine tools, unique automated production lines and various other non-standard equipment. You see, the success of our plant and the fate of our plans and socialist obligations depend a great deal on how the machine-tool builders achieve harmony in their work. They have pledged to produce 585,000 rubles of various products this year. This figure will increase almost fivefold by the end of the five-year plan.

We will actively and thoroughly carry out our own machine-tool building in the future. What has been done by us on this avenue is only the first step -- a small part of what must be done considering the high requirements that have been laid down in the decisions of the 27th CPSU Congress for accelerating the development of the economic and social expansion of our branch.

The plant's machine-tool builders have a large action program for 1986-1990. Its final goal is to reduce manual labor by further mechanizing and automating production. By the end of the five-year plan, we must bring the production volume of the machine-tool building shop to 2.2 million rubles. Twenty units of automated equipment for assembling and aligning wheels, four automatic lines for manufacturing bicycle rims and 12 rotary conveyer lines for manufacturing nipples will be installed at work positions.

One can say that the blank room of the frame shop has been transformed thanks to our own machine-tool building. Here, seven automatic lines for cutting round billets and beveling and 17 automatic machine tools are working effectively. The pipe welding machine has been modernized. On it, the welding of pipes using the resistance welding method has been replaced by the more advanced high-frequency welding method which permits productivity to be increased significantly and work quality to be raised.

The manufacturing of carriers, bicycle rims, and items made out of pipes --the main construction material when building motorcycles and bicycles -- has also been automated by the hands of the machine-tool builders. Blank-making and other operations are being transferred to automatic equipment using computers. This permits metal losses to be reduced to a minimum. Robotic complexes and automated lines will further replace the separate machine-tools in basic production and will force out manual labor.

The usual presses, which required difficult manual labor, are not in the press shop. There are efficient rows of automatic presses and robotic complexes among which many plant innovations have been installed and are efficiently working. Only adjusters who just have to observe their operation and not

forget to load the coil or feed the hopper and magazines with blanks play the master near them.

The plant's machine-tool builder collective is oriented toward producing machine-tools and automatic lines that correspond to the world level. Today, the automatic lines for cutting thick-walled tubing, beveling round billets and welding bicycle wire carriers are already not inferior to the products of well known Western firms. Or take the automatic machine-tool for punching spoke openings in a rim. It is not much to look at in appearance, but it is rather highly efficient. Specialists from Yugoslavia, who were recently in the plant, liked this and other automatic machine tools because of their simplicity in manufacturing and reliability in operating. At first, they requested diagrams to manufacture them but, then, they ordered a batch of the new items to be made for them.

Almost half of the equipment, which is made in the machine-tool building shop, consists of automated lines. Engineers and specialists from the GDR, Polish People's Republic and Czechoslovakia, who have visited the enterprise, have given a high rating to several of them. Workers in several factories and plants in Moscow, Lvov, Bobruysk, Vilnius and other cities in the country have expressed thanks for the machine tools.

By 1990, we plan to completely update the bicycle models being produced. In particular, the production of motorcycles for rural terrain and a cargo multispeed bicycle is being worked on, and we plan to increase the annual production of consumer goods by 10 million rubles. A powerful technical base is required for this. The collective of our own machine-tool building shop has been called upon to make an important contribution to its establishment.

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